ALTERNATIVE APPROACHES TO HEALTH CARE

INDIAN COUNCIL OF MEDICAL RESEARCH
NEW DELHI

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ALTERNATIVE APPROACHES TO HEALTH CARE

Report of a Symposium Organised Jointly

by

INDIAN COUNCIL OF MEDICAL RESEARCH

and

INDIAN COUNCIL OF SOCIAL SCIENCE RESEARCH

INDIAN COUNCIL OF MEDICAL RESEARCH

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PREFACE

The most important objective of a National Public Health Policy must be to ensure basic minimal health care to the great majority of people in the country. In our country, more than three decades ago, the Health Survey and Development Committee (popularly known as Bhore Committee) made some far-sighted and comprehensive recommendations towards achieving this objective. Unfortunately, however, the major inputs in the public health field in our country during the last three decades have been mostly directed towards urban areas to the relative neglect of the rural population. The direct result has been that, today, vast segments of our rural population do not enjoy even basic minimal health facilities. The greatest challenge in the field of public health now is to devise a feasible strategy for the delivery of health care to our rural masses, in the face of current constraints in manpower and financial resources. It is in this context that consideration of alternative strategies for delivery of health care assume importance.

The Indian Council of Medical Research and the Indian Council of Social Science Research jointly organised a Symposium on "Alternative Approaches to Health Care" at the National Institute of Nutrition, Hyderabad from 27th to 30th October 1976. At this Symposium, on-going operational research studies in this field were reviewed. The limitation of these studies were discussed and guide-lines for methodology and evaluation of future studies were suggested. The need for modern management techniques to ensure cost effectiveness and replicability of these strategies was emphasized.

This publication contains not only the summary of the proceedings and recommendations of the Symposium but also the relevant papers and reviews on the subject. It is hoped that this publication will stimulate further work and generate new ideas which will ultimately lead to the development of a satisfactory system for the delivery of primary health care to the rural masses of our country.

C. GOPALAN
Director General
Indian Council of Medical Research

New Delhi

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INDIAN COUNCIL OF MEDICAL RESEARCH AND INDIAN COUNCIL OF SOCIAL SCIENCE RESEARCH SYMPOSIUM ON ALTERNATIVE APPROACHES TO HEALTH CARE

Conclusions and Recommendations

1. Although health is accepted as a basic human right, four fifths of the world's population have little or no access to even the most rudimentary form of health care. Tragically enough these are the very people who are vulnerable to disease, have a high degree of morbidity and are therefore in utmost need of health services. This situation is due partly to the adoption by the developing countries of a wrong model of health care which relies heavily upon a large number of doctors, with emphasis on curative rather than preventive care, which is urban oriented and depends upon sophisticated facilities and epuipment. Added to the problem is over professionalisation of medical care and its attendant costs, the medical manpower is concentrated in urban areas to the utter neglect of rural health care. It is apparent that the solution does not lie in merely increasing trained medical manpower. Rather the need of the moment is to perceive and interpret health needs in the larger perspective of development of human resources and removal of poverty. Obviously this emphasises the importance of non-health interventions in promoting health. Recently serious thinking is going on to evolve alternative ways of delivering primary health care to rural communities both in India and outside.

2. ICMR and ICSSR organised a symposium on the above subject from 27th to 30th October, 1976 at the National Institute of Nutrition, Hyderabad with the following objectives :

(1) To critically evaluate certain approaches already made in the country on the alternatives to the health delivery system based on the presentations made by the project leaders.

(2) To discuss on the presentation of the ongoing or contemplated experiments.

(3) To formulate a set of recommendations for studies to be undertaken on the new approaches.

Programme of the Symposium

3. In order to review the existing experiences in India in the imple-

mentation and experimentation with alternative health care delivery systems, the papers that were available for the symposium were broadly distributed into five sessions.

(1) *Projects with dominant emphasis on Nutrition and Integrated Child Care :* This session included the Poshak Project, the Kasa Model Project of Maharashtra, Indo-Dutch Project at Hyderabad, and the Nutrition Rehabilitation Project of Madurai.

(2) *Hospital based Projects :* This session included the Lalitpur Mission Hospital Project, Lady Willingdon Hospital Project at Manali and Padhar Hospital Project at M.P.

(3) *Comprehensive rural health projects :* This session included the Jamkhed Project, the Miraj Project and the Mandwe Project, all in Maharashtra.

(4) *Projects based on the system of health cooperatives :* In this session the Kerala Cooperatives, the Medicare Project of Manipal, Mini Health Centres Project and the Mallur Co-operative Project of St. John's Medical College, Bangalore were presented.

(5) *Overall appraisal and review :* The fifth session was devoted to an overall appraisal of the main theme of the symposium. In this session a general paper entitled "Alternative Approaches to Health Care" was presented by Gandhigram Institute of Rural Health and Family Planning. Another paper reviewing the experiences of all the projects and suggesting areas for further research was presented by the Director of NIHAE and a paper on alternative models to the delivery of health care was also presented. The last session was meant to draw conclusion and made recommendations of the symposium.

Conclusions

4. The symposium came to the following main conclusions :

(1) In the context of reviewing the overall purpose and contributions of the symposium, the participants felt that a very basic issue in all these deliberations has been the lack of complete and adequate data on changing trends in health expenditures in relation to the budget provisions. Available information is misleading unless interpreted in the proper perspective. For instance there is an apparent decline in plan allocation for health from 3.82 per cent of total public sector outlay from first plan to 2.7 per cent in the current plan. This is due to exclusion of non-plan expendi-

ture on health. If this is also included there will be a substantial outlay for health. Most health expenditure estimates do not include water supply, environmental sanitation and family planning, and whatever is being spent by organised sectors like Railways, industries and plantations. Ideally, the total health budget should include the nutrition budget, ICDS, Defence health budget, the rehabilitation department of Social Welfare Board etc. The present system, in addition to diversification of resources, has also resulted in duplication of the administrative machinery. As a result no proper information is available on per capita health expenditure and trends in such expenditure over a period of time, urban-rural differentials in health costs, personal health expenditure in different parts of the country etc. One does, however, feel that a major portion of the health budget is visibly allocated to medical education, urban hospitals and super specialities, while such basic schemes as public health, environmental sanitation and primary health care suffer from lack of funds. Understanding the importance and magnitude of these problems, the participants reiterated the importance of an adequate information system by which timely and continuous data is available on the quality of health care, economics of health, minimum adequate health expenditure and utilisation aspects of health budget. It is felt that research departments of a few universities may undertake this task.

(2) Noting the widening gap between the demands for health care in rural areas and the availability of suitable comprehensive services and the paradox arising out of under utilisation of even the existing peripheral health services despite an estimated point-prevalence of 10 to 11 per cent morbidity, the symposium stressed the need for coordinated planning and execution of health programmes. This would imply the need to rationalise the resources after a scientific assessment of the area needs, applying the concept of regionalisation. The overall philosophy is the maximum utilisation of existing resources rather than duplication or underutilisation.

(3) Arising out of the deliberations of the symposium were the following suggestions for reorganisation of health care delivery :

(a) There is a need to establish more health units/institutions with the necessary complement of medical and paramedical personnel to serve a population of five thousand before the end of the sixth Five Year Plan to improve access to health care. This approach would give more attention to the

hitherto neglected preventive and promotive aspects of health care and would rely primarily on government resources. This presupposes that the new units will be developed after strengthening facilities existing in the PHC. The package of services to be provided by the reorganised system in the order of priority are :

(i) Primary Medical care with a built-in efficient referral system.

(ii) MCH Services including nutrition aiming at total coverage of mothers and children below six years of age.

(iii) Improvement of environmental sanitation with emphasis on providing safe water supply, sanitary latrines and disposal of wastes.

(iv) Health intelligence and control of communicable diseases, including efficient implementation of the existing National disease control/eradication programmes.

(v) School health—covering all school children.

(vi) Family Planning—covering all target couples.

(vii) Health education including nutrition education.

(viii) Efficient recording of births and deaths.

(ix) Maintenance of health records in family folders to provide reliable morbidity data.

(b) The consensus of the symposium is the urgent need to develop in addition to the existing health infrastructure, front line health workers at the rate of 1/1000 or one per village who will primarily act as a liaison between the community, the multipurpose worker and the sub-centre. These workers need not be highly qualified but must be well motivated and acceptable to the people. They must be picked up from the community itself which would imply their sense of belongingness to the community they serve. They should be given on the job training for two to six weeks with provision for continuous inservice training. The training, in addition to giving specific knowledge of tasks to be performed, should emphasize the limitations in competence and the suitable juncture for referral in each case. Effective functioning of the front line health workers depends upon supportive supervision by multipurpose workers and, therefore, imme-

diate implementation of the Multipurpose workers scheme. In this context the possibility of utilising existing functionaries like traditional birth attendants, indigenous medical practitioners, school teachers, postmasters and middle aged women who have some time for welfare tasks may be explored. Ushering in of this category of community health workers presupposes (a) the strengthening of referral services in the existing peripheral institutions, such as, primary health centres, rural hospitals, dispensaries and district hospitals and (b) active involvement of Zilla Parishad members with the primary responsibility of implementation and control resting with the Government.

(c) The duties of the front line worker will include :

(i) first aid, treatment of minor ailments and referral of cases to subcentre/PHC,

(ii) referral of emergencies-accidents, obstetrics, medical and surgical emergencies-to subcentres/PHC,

(iii) promoting notification of cases of infectious diseases,

(iv) helping in antenatal and post-natal care,

(v) recognition of nutrition deficiency in mothers and children and identification of "at risk" mothers and children,

(vi) distribution of iron, folic acid and Vitamin A supplement and nutrition education,

(vii) treatment of worm infestations and scabies wherever prevalent,

(viii) identification and enumeration of infants and children requiring immunization and organization of immunizations,

(ix) maintenance of eligible couples register and motivation of women for adopting Family Planning methods,

(x) regular supply of contraceptives,

(xi) assisting in systematic disinfection of wells,

(xii) health education, and

(xiii) validation of village statistics.

(d) Regarding the funds for payment of honorarium to the front line health worker, it was felt that resources may be raised partly through community contributions and through

Zilla Parishad. Other alternative funding arrangements depending on the local situation and problems may be tried out.

Recommendations

5. The symposium made the following recommendations :

(1) In order to improve the existing information system on all aspects of health budget and expenditure, the ICMR may prepare a comprehensive policy paper highlighting the lacunae in the existing information system and the importance of such information in the context of emerging health policies and "alternative delivery systems" and submit it to the Planning Commission.

(2) A fair trial must be given to the following three models presented in the symposium.

(a) *Model based on expansion of existing health infrastructure :* This is to be done through creating a wide net work of health infrastructure by introducing the first level health worker at almost every village and linking this up with existing health machinery. This assumes the ushering of multipurpose worker scheme and graded health services.

(b) *Model based on self-supportive system of health cooperatives :* Starting Health Co-operatives and/or health insurance at the village level and developing a health services infrastructure combined with a proper mix of the models.

(c) *Models based on additional inputs :* Establishing more health centres with the necessary medical and paramedical staff, to cover a population of ten thousand or less within the next five to seven years. This is feasible in some states and has to be purely a Government effort.

(3) While suggesting these three models, the symposium also recommends that this does not preclude experimentation with other models and approaches. The basic trends of the symposium's thinking is to encourage creative and innovative experimentation in the field of health care delivery that has remained rather conservative.

(4) For the experimentation of the suggested models the symposium recommends that study groups may be formed which

should study in-depth the different models and identify institutions which can undertake experimentation with these models.

(5) ICMR and ICSSR as funding organisations may play an active role in planning, developing and evaluating the different models and provide suitable feed back to the macro level policy process.

(6) In the integrated rural development scheme which is to be implemented in 20 districts, where the health component of the scheme is presently being contemplated by the ICMR, it is recommended that the different models suggested in the symposium may be tried in the different districts.

(7) The ICMR and ICSSR may consider extension and coordination of the already existing schemes (with suitable modifications based on experience) such as the integrated child development scheme, integrated rural development scheme, tribal sub-plan etc. to other areas.

(8) The symposium recommends the formulation and standardisation of a standard set of parameters for evaluation of different experiments in alternative health care delivery systems. Preferably the parameters could cover minimally the following aspects :

(a) quantitative coverage

(b) quality of services

(c) continuity of services

(d) efficiency in terms of cost effectiveness, and

(e) impact in terms of effectiveness in achieving the objectives and acceptance and utilisation by the community.

(9) The ICMR and ICSSR may set up study groups or working groups to suggest guidelines for the following :

(a) for identifying the prioritising parameters for evaluation,

(b) for assessment of acceptance and utilisation by the community,

(c) for the standardization of (i) basic educational requirements for voluntary community workers,

(ii) the core training content, (iii) manual of instructions, (iv) specification of tasks and roles for each category of worker, (v) drugs and equipment, (vi) built-in supervisory mechanism, (vii) system of continuing education, and (viii) referral systems,

(d) preparation of training manuals,

(e) for prescribing guideliness for selection, remuneration, supervision and utilisation of the first level health workers.

The work group on training aspects (c. and d. above) will work on a continuing basis with feed back from the experiments with the alternative systems and vice versa.

(10) A special publication should be brought out by the ICMR to provide adequate coverage for the proceedings of the Symposium.

Part A

Papers Presented at the National Symposium on Alternative Approaches to Health Care

Projects with Dominant Emphasis on Nutrition and Integrated Child Care

PROJECT POSHAK—AN INTEGRATED HEALTH-NUTRITION MACRO PILOT STUDY FOR PRESCHOOL CHILDREN IN RURAL AND TRIBAL MADHYA PRADESH

TARA GOPALDAS*

Background

The causality of preschool morbidity and malnutrition is complex and varies from region to region in the country. The major contributory factors, however, can be traced to poverty, large family norms, poor maternal health, premature and low birth weights of infants, poor environmental conditions, chronic starvation of the young child due to ignorance and adverse cultural practices. The need for an integrated health-nutrition approach for the vulnerable mother and child, therefore, becomes clear.

The problem and its causes have been well delineated and various approaches have been suggested to solve the problem. There remains, however, the crucial question with no ready solution which is : "In programming terms how do we reach and deliver these services to the elusive and 'hut-bound' weaning child, on a macro scale and at a reasonable administrative cost." Attempts to resolve the operational bottlenecks become all the more imperative in the light of India's Fifth Five Year Plan and her Minimum Needs Programme, where pronounced emphasis has been given to the task of reaching and delivering a health-nutrition package to the preschool child.

Project Poshak which was conducted in Madhy Pradesh between 1971 and 1975, attempted to address the operational aspects of health/nutrition delivery systems for these vulnerable segments in terms of infrastructure, delivery systems, beneficiary inputs, cost-effectiveness, implementation and outcome.

Definition of the scheme

The objective of the present research-action study was to evaluate the operational feasibility, the efficiency, the impact and the economics of a macro *integrated* health/nutrition pilot study in tribal and non-tribal Madhya Pradesh. The project incorporated the concept of a 'take-home' food for

*Dr. (Smt.) Tara Gopaldas, Ph. D. (Illinois), Consultant, Programme Evaluation Organization, Planning Commission, New Delhi. Moved to 27 Alkapuri, Baroda.

children (up to three years of age) and pregnant/lactating women, augmented by child-care education and health services, utilising the *existing* government rural health network of the States.

The major conceptualized advantages and disadvantages of an integrated 'take-home' food distribution, through the existing health network of the State of Madhya Pradesh, were as follows :—

Advantages

The potential to reach many beneficiaries in a large geographical area;

The educational aspect of involving the parents, especially the mothers in desirable feeding and rearing practices of the weaning child;

Minimization of cross infection among preschool children, which is an ever present hazard in fed 'on site' programmes;

Beneficiary convenience through weekly, fortnightly or even monthly collection of the food supplement;

The possibility of more frequent feedings of the supplement and consequently a higher nutrient intake per beneficiary;

The possibility that the package of services offered through the Primary Health Centre (PHC)/Subsidiary Health Centre (SHC) complex would result in a greater utilization of all available health services including family planning;

The potential for operational feasibility and large-scale replication.

Disadvantages

The possibility of high 'dispersion' of the food supplement by diversion to other members of the family, with little or no food reaching the target child and mother;

The possibility of the community being unwilling to make the effort to collect the food supplement at periodic intervals from a distribution site which may be a few kilometres away from their homes;

The possibility that the negative family planning image of the PHC may prove a barrier to the proposed study.

The request for the project came from the host government (Government of Madhya Pradesh) which is an essential prerequisite for any such pilot endeavour. It was also one of the main reasons why the State of Madhya Pradesh was selected.

Sponsorship and Source of funds

The project was administered by the Cooperative for American Relief Everywhere (CARE), India, and was sponsored by (1) the Department of Public Health and Family Planning, Government of Madhya Pradesh (GOMP) and (2) the Department of Social Welfare, Government of India (GOI). Financial assistance was provided by the GOI, the United States Agency for International Development (USAID) and the United Nations International Children's Emergency Fund (UNICEF).

The total cost of the project including the computed cost of the food supplement was approximately Rs. 4.4 million for the project period of May 1971 to December 1975.

The categories of funding and/or deputation were so planned that maximum advantage was taken of the permissible categories of funding/ deputation from each of the sponsors.

The Health Department of MP agreed to depute the entire complement of implementing staff consisting of the State Nutrition Officer, nearly 100 Medical Officers, 450 paramedical staff, Lady health visitors (LHVs) and Auxiliary nurse midwives (ANMs) either on a part-time or full-time basis. Their salaries were paid by the GOMP.

The GOI agreed to fund the transportation, storage and fumigation of the food commodity at the Tribal Welfare godowns, the in-state transportation of food, personnel and other related costs.

USAID funded the fees/salaries of research consultants and professional staff, the out of Delhi transportation and per diem of these personnel, two jeeps, practically all equipment required, re-packaging of the pre-cooked food supplement, data processing and contingencies.

UNICEF funded the cost of four pick-up trucks, the expenses incurred in the training of medical and paramedical personnel, and the cost of developing the childcare education component and other relevant communications media.

Coverage

The project was conducted on a realistically large scale to assess inherent operational and logistical problems. MP is the largest state in India in terms of topography i.e. 442,841 sq. km. It is characterised by an extremely poor communications network i.e. 8.96 km. roadways per 100 sq. km. Distances in MP, for example, from the state capital to some of the study districts are as long as 1000 km.

Project Poshak operated in 12 districts, 10 of which are tribal. The study districts chosen were Khargone, Dhar, Ratlam, Jhabua, Balaghat, Mandla, Shahdol, Durg, Bastar and Raigarh. The two non-tribal districts are Sehore and Raisen.

Out of a population of about 42 million, MP is known to have the highest tribal population (21 per cent) of any State and has 70 per cent of its total population existing below the poverty line (Rs. 401 per capita per annum calculated at the 1971 price index). Over 90 per cent of the target population was illiterate. Approximately three-quarters of the children enrolled in the study were in the second or third degree of malnutrition (Gomez classification).

The study included approximately 12,000 children and 2,700 women, who were drawn from 514 villages. In all 88 PHCs and 204 SHCs were included in the sample frame.

Services and benefits provided

The package of services consisted of a food supplement, health services (preventive and curative) and maternal and childcare education. A 700 gm. ration (100 gm/day) per child and 1,400 gm. ration (200 gm/day) per mother of ICSM, a pre-cooked corn-soya-milk powder (sweetened and flavoured) was distributed weekly from the PHC. The educational inputs consisted of actual demonstrations, flip charts, growth charts, films and slide shows and were dispensed fortnightly through interpersonal contacts at the village. Health and medical services consisted of fortnightly village clinics, including immunizations, de-worming and curative services. Paramedical staff visited the homes once a fortnight to follow-up education and medical advice and to emphasise the usefulness of the food supplement for the beneficiary.

The project commenced with an Exploratory phase (intervention period of seven months) which provided the take off point for two subsequent phases of the Project, the Extensive phase (intervention period of a year) which was conducted over a large geographic area under minimal conditions of supervision, and the Intensive phase (intervention period of 16 months) which consisted of several in-depth studies. These included the production of weaning foods from locally available foods, the effect of pricing a food supplement, the utilisation of the village school as an alternative distribution centre to the health centre, the impact of single and combined health and nutrition inputs on nutritional status, the cost-effectiveness of 'on-site' feeding *versus* 'take-home' feeding approaches, and lastly the educational impact of nutritional rehabilitation of severe PCM cases in the child's home itself.

An over-view of the project design covering the operational purpose, the staffing structure, the package of services to the beneficiary, mean intervention period, experimental design, sampling frame, monitoring criteria and the major areas of evaluation of each of the three phases i.e. Exploratory, Extensive and Intensive is presented in Table 1.

Personnel facilities and resources

Personnel : (1) The study was so designed that maximum emphasis was placed on utilising the existing health and tribal welfare infrastructure of MP to implement the Poshak study ; (2) The day-to-day implementation of the project was the responsibility of the deputed health staff of the GOMP. This ensured that a very large complement of the state's total health staff was continuously trained on-the-job and could in turn be used to train more health staff for an expanded all-state Poshak programme ; (3) Similarly, the state's Tribal Welfare Department was responsible for the storage, fumigation and delivery of the food commodity from the port to the various rural/tribal district and sub-district godowns ; and (4) The role of the external research staff was limited to planning, coordination, setting up the study, training and evaluation. The external research staff consisted of an entirely Indian multi-disciplinary team of nutritionists, public health personnel, statisticians, pediatricians and sociologists.

Training : Immediately prior to the implementation of the study, comprehensive training in all aspects of the project activity was organised for all project personnel including the health centre medical and para-medical staff participating in the project, at a central camp. This was followed-up by re-orientation training sessions and continuous on-the-job training by senior supervisory and research personnel.

A few aspects of the class room training may be worth mentioning :

Maximum emphasis was placed on the practical implementation of the programme rather than academic instruction.

Demonstration methods were employed to the fullest extent possible using prototype materials/records/equipment that would be handled by the trainees in their day-to-day work.

The project pediatricians who functioned as team leaders of 'PHC Units', on completion of their own orientation, served as faculty to train the PHC medical officers and paramedical staff.

The topics were so chosen as to equip the trainees with programme management skills.

Facilities/Resources : The GOMP not only deputed the health staff but also made available the existing PHC/SHC buildings and existing

Table 1 — An overview of the project design—Project Poshak

Main objective — To evaluate the feasibility, the efficiency, the impact and the economics of a 'take-home' food delivery system for mother and child, augmented with childcare education and medical services, utilising the existing rural health infrastructure.

Phase	Exploratory	Extensive	Intensive
Operational purpose	Refine and standardize field methodology, implementation and logistical aspects using specially deputed personnel	Assessment of operational problems in large-scale programmes with minimal supervision and utilising existing personnel resources.	In-depth study of different facets of an integrated 'take-home' delivery system : (1) Indigenous food development (2) Pricing of food (3) School *versus* PHC as alternative infrastructure (4) Cost-effectiveness of single and combined inputs (5) 'On-site' feeding *versus* 'take-home'. Specially deputed personnel were used.
Staffing Structure			
Total implementing staff per phase	4 Project pediatricians, 12 MOs, 12 LHVs, 24 ANMs	68 MOs, 68 LHVs, 272 ANMs	1 Project pediatrician, 8 MOs, 7 LHVs, 16 ANMs
Implementing staff per PHC :			
CHO or Project pediatrician	1 (33% of his time)	—	1 (full time)
MO	1 (10% of his time)	1 (10% of his time)	1 (10% of his time)
LHV	1 (full time)	1 (10% of her time)	1.(full time)
ANMs	2 (full time)	4 (10% of their time)	2 (full time)
Training Status	All trained	All trained	Alll trained
Package of Services to the Beneficiary			
Food : ICSM	700 gm/child/week 1400 gm/mother/week	700 gm/child/week 1400 gm/mother/week	700 gm/child/week or 700 gm/indigenous multimix per child/week
Childcare education : 'Take-home' food, demonstrations, flip-charts, growth charts and mass media support	Fortnightly interpersonal sessions at the village	Infrequent interpersonal sessions at PHC	Weekly interpersonal sessions at the village.

Medical and health services : Free drugs, village clinics, immunizations and de-worming.	Enhanced medical attention at PHC and village clinics. Immunizations and deworming optional.	Medical services only at the existing PHC levels.	Enhanced medical attention at PHC and village clinics. Immunizations and deworming compulsory.
Mean intervention period Experimental Design	30 weeks or 7 months. Experimental (All inputs) *versus* Control (Natural population)	44 weeks or 10 months Experimental (All inputs) *versus* Small control group (Natural population)	68 weeks or 16 months. Experimental (Single and combined inputs) *versus* Control (Natural population)
Sampling Frame			
Tribal districts	2	7	1
Non-tribal districts	2	—	—
Sample selection (study villages within 8 km of PHC)	108	365	41
Child subjects (6-36 months)	1710	8928	1242
Women (Pregnant and lactating)	472	2186	—
Monitoring Criteria	Fortnightly village follow-up visits	—	Weekly village follow-up visits
	Fortnightly monitoring and feed-back systems	Fortnightly monitoring and feed-back systems	Fortnightly monitoring and feed-back systems
Major areas of evaluation	1. Efficiency of the delivery system.	1. Programme efficiency.	1. Efficiency of the delivery system.
	2. Participation by the community.	2. Efficiency of the delivery system.	2. Participation by the community.
	3. Impact on the target population.	3. Community participation.	3. Impact on the target population.
	4. Spin-off benefits.	4. Impact on the target child (body weight only)	4. Spin-off benefits.
	5. Economics and cost-effectiveness.	5. Economics and cost-effectiveness.	5. Economics and cost-effectiveness.

facilities to the project. Other types of facilities and resources utilized by the project have been discussed earlier under the sub-heads of 'Sponsorship and Source of Funds'.

Mode of payment for personnel

This aspect has been covered under the sub-heading sponsorship and sources of fund's.

Factors affecting the quality of services

(1) *Planning :* The inadequacy of time allocated to the essential tasks of preliminary investigation, discussions, negotiations, pre-planning, micro-level planning and the mobilization of resources is very often the fundamental factor for affecting the quality of the programme and its services, once the project/programme is implemented.

Fortunately in Project Poshak, adequate time (i.e. from 1969 to 1971) was permitted for the above essential ground work.

(2) In supplementary nutrition programmes using donated foods i.e. CSM, wheat, Balahar, etc. special efforts have to be made to ensure proper storage and shelf life of the food supplement. Very often a feeding programme suffers very badly due to the necessity of having to withdraw a spoilt food commodity as was the case of Post-Kwashiorkar-Feeding Mixture (PKFM) which was initially programmed in Project Poshak.

(3) Logistical delays in transportation and delivery of equipment and supplies to the six tribal districts in the far east of MP was also underestimated and affected the smooth operation of the pilot programme. Reliable truckers were hard to find. Breakdowns were frequent and goods were often lost or damaged in transit.

(4) It sometimes becomes difficult for local manufacturers to execute large orders of even simple prototype equipment on time.

(5) Unless major responsibilities of the implementing agencies are well defined and understood at centre, state, district, block and village—the quality of services is bound to suffer. For instance, in Project Poshak, it was found that the weakest link in the chain was at the district level. Further, sometimes the lack of coordination between the two state departments of Tribal Welfare and Health caused unnecessary delays.

(6) No amount of training can substitute for the quality of commitment and motivation required in the implementing staff. There was, therefore, a great range in performance and achievement among the 88 participating PHCs.

Methods of enforcement of control

Controls as described below were enforced in several ways. Job performance in relation to job-functions and major responsibilities were periodically reviewed.

The Programme Evaluation Review Technique (PERT) was applied in the planning and scheduling of activities in the project. This helped in making a realistic estimate of the total period required for project initiation and completion. It also helped to clearly identify the relationships that existed between various activities and to identify those activities that were crucial to programme implementation and cost-efficiency. This was the major time and activity control system.

Budgetary control was enforced by a system of monthly financial accounting which was subject to internal audit and financial review. Actual expenditure was checked against budget allocations; over or under spending in any category (i.e. personnel, transportation, equipment, data processing, contingencies, etc.) was noted and reasons investigated to apply necessary budgetary controls or to justify a request for reallocation or adjustment of expenditure.

Controls were also applied in relation to the procurement of equipment and in the quantity and quality control of the same i.e. anthropometric equipment, drugs, registers, growth charts, etc.

In the case of the food commodity, inventory control methods were employed. Six weeks supply of the food commodity calculated on the basis of enrolled beneficiaries, was initially made to each of the 88 PHCs participating in the project. Thereafter, stocks were replenished against the monthly stock balance and on the basis of the average number of beneficiaries actually participating in the programme (never more than 60 per cent of enrolled beneficiaries).

The cost of production of weaning foods from locally available cereals/pulses/oilseeds and jaggery was also controlled to a certain extent by applying Linear Programming methods.

Monitoring and Evaluation

The important stages in the delivery system of Project Poshak, from the stand point of management, monitoring and evaluation were :

The delivery of food, medical services and education inputs to the study PHCs and SHCs, when required, in the quantity required, and without interruption;

The delivery of inputs from the study PHCs and SHCs to the recipient community in the study villages by the implementing staff ;

The participation by the recipient community in the project services offered by the study PHCs/SHCs ;

The cumulative impact of these three stages on the health and nutrition status of the target recipient group.

Simple two-way Management-Information-Systems (MIS) were established to the extent possible, by requiring the implementing staff at all levels to provide feed-back information reports on simply structured reporting forms to those next in the line of command. Monthly reports were received from the PHCs simultaneously by the Project Field Leader (State Nutrition Officer) at Bhopal and by the Project Director in Delhi. However, the timeliness of reporting from the PHCs in the Extensive phase of the project was poor.

The five broad areas of evaluation were :
Efficiency of the delivery system in terms of logistics (transportation) and of services ;
Participation by the community ;
Impact on the target group i.e. mother and child ;
Cost effectiveness ;
Spin-off benefits.

Very simply, the experimental design of the project provided for a comparison of an experimental group of target children and women, who received a package of services (consisting of a food supplement, childcare, education and medical services) on a continuous basis for a period ranging from 7 to 16 months, with a matched control group (natural population that received no services). The improvement in health/nutritional status of the beneficiary group was assessed through a series of cross-sectional and/or longitudinal baseline, midterm and final evaluation surveys.

Impact evaluation with respect to the child was based on anthropometry (weight-for-age, length-for-age, mid-arm circumference and head-chest circumference ratios) ; clinical signs ; morbidity history ; dietary intakes ; and awareness/attitudes to health/nutrition and childcare concepts among the mothers ; and mortality statistics (in the Intensive Phase of the Project).

The indicators of impact evaluation employed with respect to the pregnant and lactating mothers were dietary intakes : morbidity and clinical signs ; and attitude shifts related to health and nutrition concepts in pregnancy and lactation.

Major findings

The major conclusions and recommendations of the study were as follows :

(1) It was operationally feasible to integrate maternal and child health (MCH) nutritional programmes using the 'take-home' food approach, with the existing rural health programme of the country. The cost of delivering the package of services was Rs. 208 per child per annum in 1972. It would be possible to initiate an expanded Project Poshak type of programme to include an estimated three million preschoolers (one to six years of age) within 8 km of the existing 5000 PHCs in India, for approximately Rs. 620 million annually. The food component would cost Rs. 260 million ; that of medical services Rs. 40 million ; and that of the education component Rs. 20 million ; the remaining Rs. 300 million would represent personnel costs.

(2) The 'take-home' food approach was a powerful educational tool for largely illiterate communities.

(3) There was a tremendously enhanced utilization (33 to 41 per cent) of the health centres. Acceptance of MCH services, immunizations, and even birth control methods showed very encouraging upward trends in those communities that received the services.

(4) The nutritional status of the intervened groups of children demonstrated improved nutritional status against their age matched non-intervened counterparts as evidenced by a better weight-for-age status, less episodes of illness, and enhanced knowledge gains in child care practices among the mothers.

(5) It was feasible to attach small food mix units to the health centres to produce weaning and toddler foods. These units could form an integral part of the rural health centre complex.

(6) The package of health and nutrition services gave the best nutritional impact with respect to the young child. However, almost as good results were achievable with a high level of health care supported by a relatively low level of a food supplement indicating that far more cost-effective, manageable and wide coverage programmes need to be explored using optimal mixes of health and nutritional delivery for maximal impact.

(7) Approximately half the 'take-home' ration reached the toddler. The food was shared by siblings up to the age of six years. Inclusion of this older age group (three to six years) would greatly minimise the diversion of food. Approximately a tenth of the 'take-home' food ration reached

the pregnant woman and approximately a fourth reached the lactating mother. This points to the need of developing special 'mother foods' which would be both culturally and psychologically acceptable.

(8) In countries with slender resources there is definite need to experiment with feeding approaches that relate to the seasonal need of the populations. Food is most required during the lean, drought-prone summer months.

(9) 'Take-home' food approaches are as efficient as 'fed-on-site' systems for two-thirds the cost ; the potential outreach of the former is more than double that of the latter.

(10) Reaching the poorest of the poor will always be a problem as their participation in welfare programmes is limited. It may be possible to partially reach this segment of the population through properly organised Food-for-Work schemes that generally attract them. Mobile creches to render health and nutrition services for the vulnerable children of these families need to be explored.

(11) Even nominally priced supplements are out of the reach of those below the poverty line.

(12) The village school offered a good alternative as a distribution centre of health and nutritional services to the very young child and needs to be explored.

(13) Child care education needs to be imparted to the young mother substitutes (aged seven to ten years) who generally care for the very young child when the mother is out at work.

Programmes based on Project Poshak have already commenced in India with the aid of CARE-India. The Ministry of Health, (GOI), has started an experimental programme called 'SURAKSHA' (protection) where children (up to four years) of family planning acceptors in the National Post Partum Family Planning programme will receive a package of Poshak-type of services. It is hoped that such an approach will make the best use of scarce resources, attempt to ensure better child health, and motivate greater numbers from the socio-economically depressed sections to accept birth control methods, as a way of life.*

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*The material of this paper has been derived from the following publication : Gopaldas, T, Kansra, A.C., Srinivasan N., Varadarajan, I., Shingwekar, A. G. Seth, R., Mathur, R. S. and Bhargava, V. (1975). Project Poshak (volumes one and two)—CARE—India, New Delhi.

THE KASA MODEL INTEGRATED MOTHER-CHILD-HEALTH-NUTRITION PROJECT, PRIMARY HEALTH CENTRE, KASA, TALUKA DAHANU, DISTRICT THANA, MAHARASHTRA

P. M. SHAH*

Background

Considering the trends in development of medical services and economic growth, it is doubtful whether at the end of this century the developing countries will be in a position to provide health care to all the people, including those in the remotest villages. Two thirds of the deaths in these countries are not attended by any medical personnel and more than half of the world's people have no access to medical care. For those who can reach the medical care system, the contact may have no significant effect on their lives or health[1].

Generally, most of the people who need health services are neither identified by health personnel nor do they voluntarily utilise the available services. Thus the utilisation rate of health services is poor in many developing countries. Long distances, difficult terrain, poor transportation, poverty, working mothers, heavy household chores, low health consciousness, doctors' and at times nurses' inclination towards private practice, cultural differences between those who administer medicine and the beneficiaries, the shortage of medical and paramedical personnel and their vague job descriptions are some of the factors that have contributed to the underutilisation of available health services[2].

The medical need is usually not complex. Many of the recognised threats to health like diarrhoea, upper respiratory tract infection, malnutrition, infectious diseases and infestations are preventible. Management and prevention of many of these ailments do not need the services of a doctor or a nurse. Involvement of some workers from the local community can be of considerable help in bridging the cultural as well as manpower gap between the health services and the community.

During 1965-1968, it was observed that the cases of Kwashiorkor attended to at the Paediatric Clinic of the Rural Health Unit, Palghar,

*Dr. P. M. Shah, Professor of Paediatrics, Institute of Child Health, Grant Medical College and J. J. Group of Hospitals, Bombay; Honorary Project Director (Technical), The Kasa Mother Child Health Nutrition (MCHN) Project.

responded favourably under domiciliary care and there was no recurrence during one to three years' follow-up. An analysis of such management showed that the cost to the family was Rs. 26/- and to the Government Institute Rs. 9.90 for curing one child as compared to Rs. 136.50 and Rs. 367.30 respectively, at the Teaching Hospital in Bombay[3]. In addition the domiciliary management was culturally acceptable to the families. The impact of the rehabilitation at home after one to three years on the diet of the child and the other young children in the families and in the neighbourhood was encouraging. The domiciliary management was successfully carried out mainly through nurses and influential neighbours[4].

The World Health Organization (WHO) got interested in this new and promising health care and nutrition delivery system at the doorstep of the people through nurses and local villagers. The WHO-aided project was started at Palghar in 1972 where 20 villages in two sub-centre areas were taken up for studies on health services personnel from the community i.e., the local people who work as Part-Time Social Workers (PTSWs)[5]. The accomplishments within 18 months of the commencement of the project were very encouraging and stimulated another International Agency i.e., cooperative for American relief everywhere (CARE) Maharashtra and the Government of India and Government of Maharashtra to study the feasibility of duplicating this effort at delivery of services all over rural India, particularly in Maharashtra. Thus the Kasa Project was started in 1974 in the entire area of the Primary Health Centre (PHC), Kasa.

The Scheme was based on assessment of facts and figures regarding mortality and morbidity. Considering the fact that 40 per cent of the total deaths occur in the first six years of life and that 80 per cent of such deaths are due to preventible illness related to malnutrition, the focus of the project was logically on elimination of malnutrition.

It was considered essential that experiments on health delivery should be tried out in the natural environment of the PHC, using its infrastructure, if these experiments were to have relevance for later implementation of the scheme by the government.

The project area is socio-economically poor, the per capita income being as low as Rs. 0.72 per day and literacy rate about 11 per cent. Over 88 per cent of the population is tribal, socio-culturally and economically backward for centuries. The area is hilly and covered with forest. A typical tribal village consists of a number of hamlets and each hamlet has a cluster of huts. On an average, a village has six hamlets and some villages are spread out five to six km, from one end to the other. People fetch water from drinking-water wells which are located in all villages except in some hamlets where the inhabitants have to go to rivulets or walk-up-to

two km to fetch water. The nearest telephonic and telegraphic communication is 25 km. away. Except for a few houses in 10 villages, there is no electrification.

Definition of the scheme

The objective is to deliver integrated health and nutrition services to young children and mothers by using existing PHC health-nutrition services programmes and personnel in a unified and modified manner with the addition of PTSWs being employed to serve as link workers in providing care to all and special coverage to the most needy at clinics or at home.

Sponsorship

Government of India, Department of Social Welfare, initially for a year, Government of Maharashtra (Rural Development Department and Public Health Department) and CARE-Maharashtra.

Coverage

The Project covers the PHC Kasa area including both the Saiwan and Kasa tribal Blocks. There are 70 villages in the Kasa PHC area and the population as on 14th January, 1975 was 63,433. The population in the 60 programme villages was 56,364. The remaining 10 villages were maintained as control villages. The farthest village is 40 km from the PHC and 12 km from a health sub-centre.

Services and benefits provided

A system for the effective surveillance of all under-sixes and married women, especially pregnant women and lactating mothers, has been designed for the entire project population, no matter how remote the village is.

Health Services

Health services are provided at the doorstep through PTSWs and staff of the PHC. A PTSW is equipped with electrolyte powders, massive dose of vitamin A, tablets of iron-folic acid, piperazine, aspirin and sulphadiazine. They are given a manual of "Standing Instructions for Timely Health Care of Children and Mothers" which describes the symptoms of common diseases and their management[6]. They are instructed to follow "Do's and Don'ts" mentioned in the manual. PTSWs' carry out the treatment of the diagnosed cases of malaria, tuberculosis and leprosy in their villages. A general referral system is being strengthened to refer the cases to the Auxiliary Nurse Midwives (ANMs), Male Multipurpose Health Workers (MMHWs) or doctors.

Nutrition services

Selection of clients for receiving food supplements : Weight standards have been set for selection of children under-six and women as beneficiaries of the nutrition programme. A PTSW assesses the grade of nutrition of the children under her care by using a weight chart and the overlay-stencil[7]. Children under six weighing 65 per cent of the Harvard Standard or below, receive food supplements till they attain weight equal to or above 65 per cent of the standard and maintain that weight for six weeks. The lists of food beneficiaries are updated monthly by PTSWs. Women who weigh 42 kg. or less at the thirty fourth weak of pregnancy also receive supplements during the remaining weeks of pregnancy and continue through the first four weeks of nursing[8,9,10].

All pregnant women in the last three months receive iron-folic acid tablets three times a day.

The nutritional supplement

Roasted Bengal gram and roasted ground-nuts are used as supplements to provide 361 calories and 17.9 gm. of protein to the needy child and 541 calories and 26.8 gm. protein to a pregnant or nursing woman. The small, severely malnourished children in the age group of nine to fifteen months are given the same items mixed with jaggery in a powdered from, supplying 291 calories and 11.3 gm. of protein. These supplements are given everyday of the year. Ground-nuts and gram being snack items are intended as a supplement and not as a substitute for a meal.

Immunization services

The first immunization campaign was intentionally delayed until nine months after the implementation of the nutrition and health programmes in order to develop better rapport with the community. The mass campaigns were organised during November-December 1975 (13 days) and February 1976 (12 days) in which the district team of BCG vaccinators and the staff members of the PHC, the Sanitary Inspector, MMHWs (Smallpox Vaccinators only), ANMs and PTSWs participated. During May 1976 a mopping-up campaign was carried out for 10 days by the local staff of the PNC. On-going immunization programmes for smallpox and diphtheria, pertussis and tetanus (DPT) have been continued by the ANMs and MMHWs.

Surveillance for the "at risk" concept

Among the primary objectives of health services is the reduction in death rate and of illnesses that lead to crippling consequences. At the Palghar Project 84 per cent of the under-six who died were showing one or more of the "at risk" indicators. It was possible for PTSWs to identify

as "at risk" children in advance in about 76 per cent of the under-five who died.[10,11].

The persons are listed as "at risk" from the principal target group for most project programmes Children under six years of age are listed as "at risk" if they have any one of the following indicators[10] :

1. Weighing 65 per cent or less of the reference;
2. Failing to gain weight for three successive months;
3. Loosing weight during two successive months;
4. Weighing less than 1.5 kg at birth,
5. Having an illness such as measles or acute gastro-enteritis.

At the Palghar Project two thirds of "at risk" under-five have been so classified because of severe malnutrition. The "at risk" under-five represented 2.1 per cent of the total population and yet the deaths among these "at risk" children represented 21.5 per cent of the total deaths, indicating reducible mortalities if special care is directed to the "at risk" segment of the population.[10,11] In all 25.5 per cent of the under-six children in the Kasa Project were "at risk" in May, 1976. On an average there are about 40 "at risk" children in a village having three to eight hamlets.

In order to reduce perinatal deaths and incidence of light-for-date births, the "at risk" concept is extended to pregnant women[10].

The supervisory staff while visiting villages/hamlets see "at risk" children and women and advise PTSWs on their management and refer or show these cases to the Medical Officers. Families are graded as "at risk" when more than one child suffers from severe malnutrition[11]. The parents of these families are recommended to the local Block Development Officer for jobs. Under the Government's Employment Guarantee Scheme they get preference in employment and those who wished to work have not been disappointed.

Family planning

From the analysis of households of the families with Kwashiorkor children in the tribal villages at Palghar it was observed that children up to the age of 14 formed 60.8 per cent and under-five 32.7 per cent[12]. The planning of families, particularly through spacing, is of utmost importance for preventing severe malnutrition.

It was decided to take up family planning programme in the second year of the project after developing rapport in the communities. During the year from April 1974 to March 1975, only 45 vasectomies were

performed at the PHC, Kasa. During the period April 1975 to March 1976, the figure went up to 750 vasectomies and 27 tubectomies. As a matter of fact the family planning programme was intensified only since November 1975 when there was only one Medical Officer in position at the PHC. The performance exceeded the revised target given by the government to the PHC by 19 per cent. Tubectomies were performed for the first time in the Kasa PHC area.

Vital support for the campaign came from the Government and local bodies such as the administrative body at the block level (*Panchayat Samiti*) and the Forest Workers Society who provided generous cash incentives. All the staff members of the PHC and PTSWs strived hard to achieve that performance.

Health and nutrition education

The main tool for providing education is the home-retained weight/health record cards of the under-six and women. A more effective tool is the visible, demonstration of the transformation of malnourished children to normal ones. One problem in the area is that of working mothers leaving their small children to the care of older siblings, aged six to eight years. These young mother-substitutes feed the small children very irregularly. Hence the health and nutrition education needs to directed to these mother-substitutes. The PTSWs talk to these mother-substitutes about the amount and frequency of the feeding to be given to the young ones. The feeding is advised according to the availability of food at home. During the two months of summer some of the families live only on tuber roots or gruel prepared out of wheat or millet and the PTSWs advise to supplement small infants' intake with these items. Advice is also given person-to-person or to small groups concerning the management of simple illnesses, as per the instructions in the "Standing Orders" which have been prepared in Marathi and given to each PTSW.

Environmental sanitation

Every month PTSWs chlorinate each drinking-water well in their area. They are taught to calculate the amount of tropical chloride of lime required for a well. They also try to involve the villagers in environmental sanitation.

Personnel, facilities and resources

Personnel : The normal staff structure of a PHC has been maintained at Kasa. As a matter of fact for a period of thirteen months only one out of the two Medical Officers was in position. There are eight ANMs (two at headquarters and six in sub-centres) and four Smallpox Vaccinators and both of these cadres of personnel have been converted into MHWs. The

job assignments and area of service were discussed in a joint meeting and the ANMs agreed to look after 6500-7000 population each in about seven villages and the MMHWs agreed to cover about 3000 population in three to four remote villages which are at times spread over a distance of 15 km. in hilly or forest areas. The Sanitary Inspector's job was converted into that of a Programme Co-ordinator. The Nurse Midwife and Programme Co-ordinator work as the supervisors of the ANMs and MMHWs[13]. To bridge the gap between the last person on the PHC health services staff, i.e. ANM or MMHW and the community, 28 PTSWs (Village Health Workers) from the local villages are employed. The ANMs and MMHWs are a cadre of immediate supervisors to the PTSWs. A special Programme Officer supervises the entire scheme. Each team member was consulted about the job description and after due discussion with all, the points of supervision and training were identified. The PTSW covers about 2000 population in an average of two villages and works four to five hours a day. She gets an honorarium of Rs. 80/- per month.

The PTSWs look after the health and nutrition of all children under-six and married women. The ANMs and the MMHWs concentrate on "at risk" children and pregnant women identified by the PTSWs and the Medical Officers see those referred for immediate care.

Selection and background of the PTSWs

At the onset of the project the programme was explained to the local communities. The attempt to involve school teachers, traditional mid-wife or village Headman's wife as Village Health Workers was unsuccessful at the Palghar Project and hence the community leaders were asked to suggest candidates from the villages. The sixty programme villages at Kasa are divided in twentyeight zones and each zone has a population of about 2000, scattered in one to three villages. The Assistant Block Development Officer and local leaders helped in the final selection of the PTSWs. Emphasis was laid on selecting local middle-aged mothers with educational qualifications amounting to about seven years of schooling and having leadership qualities and enthusiasm for serving the community.

In the Kasa Project area the literacy rate for women is less than 10 per cent and most of whom are young, which makes it very difficult to find literate, middle-aged women. The mean age of the PTSWs in the Kasa project is 22 years and their educational background is, on an average, seven years of schooling (minimum three and maximum 10 years). It was difficult to get female workers for all areas. In February 1976 there were 52 per cent tribal males, 24 per cent non-tribal females and 24 per cent tribal females. All but five of the 28 PTSWs are residents in the zones they serve, the five non-residents come from adjacent villages.

Training

The initial training was for four weeks[13]. Class room-cum-practical demonstrations and exercises lasted two weeks and the remaining period was spent in the field. The training included child growth and development, nutritional disorders, common childhood diseases, infectious diseases and immunizations, medical problems of pregnancy and post-partum. The training programmes were arranged to provide practical experience in taking and charting weights, identifying Kwashiorkor, severe anaemia, gross vitamin A deficiency and assessing the grade of malnutrition. They were trained in ascertaining the correct age by using a local-events calender specially prepared for the region[14]. The Programme Officer, Medical Officer, Nurse Midwife, Sanitary Inspector and ANM conducted the training programme.

It was experienced that these workers have limited retention capacity and hence it is recommended that the training be for a short period and should be supplemented and reinforced with built-in or on-going training.

A typical day's work of a PTSW

The assignments have been spelled out for each member of the team including the PTSW[13]. She starts from her home at about 10 a.m. and goes to the village as per the timetable which is prepared in advance for a year and revised, if necessary, every two months. She carries a shoulder bag which accommodates the duplicate weight charts of under-six, cards of the women of the hamlets she visits that day, small spring-balance weighing scale and an adult portable scale once a month if there is a pregnant women, the lists of "at risk" children and pregnant women and medicines. She goes to somebody's house or underneath a tree where she collects the children and mothers.

She weighs all the children, once a month, identifies the grade of nutrition by slipping the weight chart into a plastic overlay-stencil which has multiple lines on it to indicate the various grades, decides on nutrition supplements inquires about illnesses, particularly in "at risk" children and women, gives medicines as instructed in the manual[6], talks to mothers on feeding, hygiene and child care. She inquires about the menstrual history and enters it in the woman's card, ascertains early pregnancy, records abortion, still-birth and the state of pregnancy. She visits homes to see those who have not come to the 'clinic'. Once a week she distributes nutrition supplements in all the hamlets of a village and examines children and women in only one hamlet. She meets the traditional midwives and health practitioners casually and talks to them, but does not interfere with their work. If there is any serious case or acute illness she reports to the

ANM or to the doctor. She maintains a diary on each day's work and keeps records of nutrition supplements and drugs.

She helps in immunisation programmes, motivates eligible couples for family planning and chlorinates the drinking-water wells every month. She conducts a census initially, keeps it up-to-date and collects vital statistics. The work of the male PTSWs is similar but they find it difficult to inquire about the menstrual cycles. To cope with this they try to get the help of a female member from their own family.

The ANM/MMHW visits the PTSW's area twice a week to observe her/his work, guide and supervise. They both go to the homes of "at risk" cases who have not reported at the 'clinic'. A doctor is supposed to visit a PTW's specific village once in six weeks ; if there is an emergency he comes immediately.

Recently, the training of dais practising in the project area was begun and they will receive Rs. 2/-per delivery, if the delivery is conducted according to instructions.

In addition to the PHC staff and the PTSWs, there is a Programme Officer, a Field Supervisor, three helpers for preparing the packets of nutrition supplements and three office assistants. Many of these workers also help in research.

CARE-Maharashtra has provided three to four employees for helping in the supervision, training, research, dissemination of scientific information and maintenance of accounts.

Input in terms of three weekly visits per month of the Honorary Technical Director of the Project is noteworthy. He has been working on the "Health at Home" concept since 1965. His visits to the project were from the point of research and training.

Facilities and resources

The facilities and resources of the PHC are available to the programme. In addition additional office space is used for record keeping and preparing the packets of supplements.

To ensure the necessary movement of staff members for delivery of services, supervision and distribution of the nutrition supplements, a project jeep and two motor-cycles have been provided. Provision of Rs. 20,000/- is also made for additional drugs and vaccines. This amount is in addition to the usual grant of Rs. 8,000/- for drugs to the PHC.

During the first sixteen months of the Project (December 1974 to March 1976), in addition to the budget of the PHC, the inputs in terms of money were :

Particulars	*Expenditure in per cent*
Equipment and material	14.4
Training	3.1
Salaries	21.1
Transport	19.1
Vaccines and medicines	6.9
Medical equipment	0.6
Food supplements	26.7
Surveys	1.1
Data analysis	1.5
Contingencies	5.4
	100.0 per cent of total Rs. 2,90,000/-

The expenditure on services and research are combined in the above figures. During the first sixteen months there was a higher expenditure on equipment and on some staff needed for research. Items such as salaries, transport, surveys, data analysis and contingencies include expenditure on the research component. It took sometime to identify the beneficiaries by medical criteria and hence initially distribution of the supplements was less. Based on the figures of distribution during May 1976, it is expected that about Rs. 1,80,000/- will be spent on the nutrition supplements during the year from June 1976 to July 1977.

Mode of payment for personnel

Part-time social workers are paid monthly at the PHC by the project section. Out of the remuneration of Rs. 80/- (including Rs. 10/- for transport) 10 per cent is deposited every month and is released in June and December.

In Palghar, 87.5 per cent of the PTSWs were able to purchase their own bicycles with the loan advanced to them, which was recovered at the rate of Rs. 20/- per month. Similar scheme is being started in Kasa Project.

The Programme Officer and other additional staff receive their salary from the Project.

Factors affecting quality of services

Difficulties faced

PHC set up : When the services are organised in the natural milieu of a PHC, there are more difficulties which are faced than when some agency/organisation/individuals run such programmes independently.

However, the services operated in the infrastructure set-up of a PHC will be more realistic for assessing its replicability.

Governmental delays

The administrative procedures in the PHC and governmental set-up took time for action. Communication from the District Health Officer (DHO) or higher level took time to reach the PHC and sometimes needed repeated reminders. The delays are at the secretarial level in the office of DHO and similarly in the office of the Block Development Officer, Dahanu Taluka and working through the set-up of *Zilla Parishad.*

Assignment "months"/"weeks" for PHC staff

The family planning campaigns and periodic searches under Small-pox Eradication Programme and other priority oriented activities were entrusted to the PHC staff which interfered with the project programmes. These instructions were received from District/State headquarters or the Central Government and had to be carried out. During such periods there was dislocation of supervision and activities of the Medical Officers and supervisory staff. Such activities took the entire time of these team workers for three to four months in a year.

Vacancies and delay in filling-up the posts

For only four of the first 17 months of the project there were two Medical Officers at the PHC. One doctor resigned within three months after starting the project as he had already started a private clinic in Bombay. Due to a family catastrophy the other doctor had to resign. It took considerable time to get that post filled. As one of the objectives of the project is to study the feasibility of duplication, no pressure was exerted at higher administrative levels except at the level of the DHO, who is the Project Co-ordinator, to fill the post. In Thana District a Medical Officer continues to be inservice for an average of about two years.

Outside interest in the project

The visit by a number of visitors, although welcome, took consider-able amount of time of the Honorary Technical Director and Programme Officer and in fact often interfered with the smooth-running of the programmes.

Another activity which occupied a great deal of the Programme Officer's time from Project activities had been the training of Child Develop-ment Project Officers and Supervisors of the Integrated Child Development Services (Government of India's programme) of 33 blocks from 22 States of India.

Drop-out rate of the PTSWs

It is the experience from Palghar as well as the Kasa Project, that the drop-out rate of PTSWs is high during the first year of operation. At Kasa, at the end of 18 months, only 35.8 per cent of the workers who were employed at the very beginning were still in service. The drop-out was very heavy following the kharif harvest. Some of those who resigned have rejoined. The turnover of male workers was greater than female. The problem became less during the second year and during the third and fourth years at the Palghar Project, there was a waiting list[15]. The drop-out and recruitment of a new person adds to the task of training at unscheduled periods and this sort of training is far from satisfactory.

Difficult terrain and poor communications

These factors, as stated previously, do affect the working of the project to some extent.

Difficulties in distribution and storage of nutrition supplements

About 85 per cent of the food deliveries were made to the PTSWs in all "inaccessible zones" of the project during the monsoon when it is difficult to walk on the muddy roads and rivulets are in spate. In June, deliveries of nutrition supplementation increased to 89.5 per cent to the PTSWs and they delivered 80.4 per cent to the beneficiaries themselves in all zones covered by PTSWs. With such a high level of distribution a new problem has arisen, that is, storage facilities. A solution to the problem is being sought by building traditional rat-resistant storage containers purchased from local craftsman.

Tribal population

Extreme poverty and illiteracy in tribals is very common. During summer they may have nothing to eat except tuber-roots. During the initial three to four months of the project it was a day-to-day scene that when any stranger, particularly a medical person, was to come to a village, all the residents would either run away to the hills or shut their doors.

Positive factors

The inputs which have made positive contribution towards the quality of service at Kasa are the Programme Officer, (who had worked in the Palghar Project for two years before joining at Kasa), the Honorary Technical Project Director (who contributed new methods and techniques) and the help in management from CARE-Maharashtra.

Methods of enforcement of controls

Controls are maintained through strictly following the master time-table of each team worker. Initially, two-monthly time-tables were prepared

for each team member and now yearly time-tables are used. This system puts a specific person at a specific place doing specified work. The supervisors of the PTSWs are the ANMs and MMHWs. The Programme Co-ordinator (previously designated Sanitary Inspector), Programme Officer, Field Supervisor and Nurse-Midwives supervise the work of the ANMs and MMHWs. The Medical Officers supervise the work of all. Each PTSW is supervised at least twice a week and each ANM or MMHW is supervised two or three times a month. Local leaders also report on the activities of the PTSW, ANMs in their villages. The Project Director and DHO supervise the work once a week and once a month, respectively.

Evaluation

Every month, the PTSW provides village-wise information on births, deaths, immigration, emigration, nutritional grades of all under-six, "at risk" children, children who deteriorated or improved, new cases of Kwashiorkor, women in various months of pregnancy, "at risk" pregnant women, abortions, still-births, eligible couples, illnesses treated, referrals made, wells chlorinated and massive Vitamin A doses given. Their diaries provide some case-study type of information. The compilation of data by PTSWs is not entirely perfect and the supervisors help in making tabulations. These observations are verified by various staff members, supervisors the Programme Officer and others. The evalution tables are prepared at sub-centre level and in the PHC.

Of the different services offered in the project, the impact of the nutrition programme is reflected in Table 1. A total of 2259, children representing nearly 24 per cent of all children, were receiving a significant drop in the number of severely and moderately malnourished children (6.8 per cent) comparing the figures for May 1975 with May 1976. However, when analysing individual weight cards of beneficiaries during 18 months of programme implementation, as indicated in Table 1, it is found that 62.95 per cent of the severely malnourished children (weighing less than 65 per cent of the reference) improved their weight by 10 per cent more than the expected growth, i.e., gained as expected for the age, plus 10 per cent more gain. In addition, 23.39 per cent of the malnourished children gained as expected (they did not deteriorate).

The immunization status of the children for smallpox and BCG vaccines went up from 52.3 per cent and 0.2 per cent to 94.2 per cent and 54.0 per cent respectively, during the period June 1975 to May 1976. By June 1975 only 2.1 per cent and 1.4 per cent of the eligible children were immunized with one and two doses of DPT, respectively. After one year, the status shot up to 81.1 per cent and 57.0 per cent. The achievement was remarkable in view of the difficult terrain of the project area, the

Table 1. Impact of 18 months supplementation of the nutrition status of severely malnourished children.

April 1975 to October 1976										
Nutritional status April 1975		Nutritional Status after Supplementation—October 1976							Children improved	
Weight per cent of the reference	Total children	80 per cent and above normal (per cent)	71—80 (per cent)	66—70 (per cent)	61—65 (per cent)	51—60 (per cent)	50 and below (per cent)	Dead*	Total	Per cent
61-65	544	2.57	24.63	26.84	21.32	17.46	0.74	6.43	294	54.04
51-60	690	1.45	17.54	27.97	20.72	26.67	1.88	3.77	467	67.68
50 and below	121	2.48	11.57	9.92	19.83	32.23	14.05	9.92	92	76.03
Total	1355	1.99	19.85	26.90	20.89	23.47	2.51	5.39	853	62.95

*Death figures are cumulative.

sizable tribal population (88 per cent) and the scale of the operation (9560 under sixes). On-going programmes by the ANMs and MMHWs, with assistance of PTSWs, will continue to cover the remaining eligible population. A mass-campaign for BCG will be organised during December, 1976.

References

1. Byrant, J. (1969). Health and the developing world. Cornell University Press, London.
2. Shah, P. M. (1976). Health and Nutrition at grass-roots level through local Part-Time Social Workers and Community participating : Assignment Children, UNICEF, 1211, Geneva.
3. Shah, P. M., Udani, P. M. and Aphale, R. V. (1971). Domiciliary management of Kwashiorkor in rural set-up : A longitudinal study of clinical economic and social aspects. *Indian Paediat.*, **8** : 805-813.
4. Shah, P. M., Wagh, K. K., Kulkarni, P. V. and Shah, B. (1974). The impact of nutrition rehabilitation on the diet of children. *Trop. Geogr. Med.*, **26** : 446-448.
5. Shah, P. M. and Junnarkar, A. R. (1974). Village Assistants, SEA/FP 13/12, WHO SEARO, New Delhi.
6. Shah, P. M. and Shah, K. P. (1976). Standing instructions to the nurses and Part-Time Social Workers for the timely health care of children and mothers. The Kasa MCHN Project, Kasa, Taluka Dahanu, Dist. Thana, Maharashtra.
7. Shah, P. M. and Junnarkar, A. R. (1976). Domiciliary treatment of protein calorie malnutrition. Second year progress report. Institute of Child Health, Bombay.
8. Shah, K. P. and Shah, P. M. (1972). Relationship of weight during pregnancy and low birth weight. *Indian Pediat.*, **9** : 526-531.
9. Shah, K. P. (1975). Selection of pregnant mothers as beneficiaries for nutrition supplements. *J. Obst. Gynae. India*, **25** : 371-373.
10. Shah, P. M. and Junnarkar, A. R. (1976). Weightage of the various "at risk" factors and practicability of management. The paper presented at the International working Conference on "at risk" factors and health of young children held in Cairo, June 23rd to 28th (In press).
11. Shah, P. M., Junnarkar, A. R., Khare, R. D. and Dhole, V. S. (1976). Community-wise surveillance of "at risk" under-five in need of special care. *J. Trop. Ped. Env. Child Health*, **21** :
12. Khare, R. D. and Shah, P. M. (1976). Insight into the etio-ecological factors of Kwashiorkor in a community. *Indian Pediat.* **12** : 405-407.
13. Shah, P. M. and CARE-Maharashtra (1975). Appendices, First Progress Report, Dec. 74-March, 75. Kasa Model Integrated Mother-Child Health-Nutrition Project, Kasa, Taluka Dahanu, Dist : Thana, Maharashtra.
14. Shah, P. M. (1974). Early detection and prevention of protein Calorie Malnutrition, Popular Prakashan, Bombay.
15. Shah, P. M. (1976). Domiciliary treatment of protein calorie malnutrition. 3rd and 4th year Progress Reports, Institute of Child Health, Bombay.

Child Welfare Project

INDO-DUTCH PROJECT FOR CHILD WELFARE

H. W. Butt*

Background

The Indo-Dutch Project for Child Welfare is an experiment in a selected block of Hyderabad district. It started in late 1969 on the initiative of the Queen of the Netherlands who established the Netherlands Foundation for Child Welfare as a special Dutch contribution to the well-being of children all over the world. The founders are the Netherlands Organisation for Development Cooperation, the Netherlands UNESCO Centre and the Netherlands Committee for UNICEF. Chevella Block, which is 43 km from Hyderabad city, was selected as representative area for conducting the experiment. Nearly eighty per cent of the total working population of this Block is engaged in farming. But irrigation facilities are inadequate. Only 10 per cent of the population in the project area have studied up to primary school and above. Malnutrition is a serious problem. Morbidity rates are quite high.

Aims and objective of the project

The main objective of the Project is to explore ways and means of increasing the effectiveness of the existing services in child welfare (0–16 yrs) by better coordination and to increase these services with better techniques. As an integrated Child Welfare Project, it seeks the overall development of the child and simultaneously aims to promote activities that can strengthen the economic base of the Project as a whole. Training of personnel and population is an essential component of the Project. The project aims at replicability and hence research and evaluation are its vital aspects. Instead of merely sanctioning grants and using foreign expertise, the strategy is to add minimum inputs, preferably at points of entry to produce a chain reaction with the emphasis on local initiative and existing resources. Instead of creating a separate hierarchy it aims at strengthening the local government structure, removing bottlenecks and demonstrating programme efficiency and public involvement. There is a continuous dialogue between the Government and the project to ensure continuity of established programmes with successful practices that can be taken over once they are initiated by the Project. The activities cover all aspects of health, education and nutri-

*Dr. H. W. Butt, Director of Indian Bureau, Indo-Dutch Project for Child Welfare 6-3-885, Somajiguda, Hyderabad (Andhra Pradesh).

tion connected with mother and child care, nursery schools, *Mahila Mandals*, primary schools, youth development, nutrition demonstration units, creches, poultry and dairy units and adult education.

Definition of the scheme

The project aims at the functional integration of the tasks of the ANM, the Balsevika, the primary school teacher and the craft teacher and use them as nerve centres to bring about social change.

The overall purpose of the project is to develop child development activities through local support and active participation of the people.

The project aims at studying and determining the programme effort in terms of personnel, time, materials, expenditure, cost controls, clinic management, equipment, etc. A bult-in mechanism of evaluation is necessary to assess programme efficiency and to measure the adequacy of the services. Efficiency of the programme includes getting the job done well at the most reasonable cost i.e. achieving a statisfactory input output ratio.

The areas for evaluation are :

(a) administration of the programme,
(b) clinic and health services,
(c) field work for nutrition and health education,
(d) public information and mass communication,
(e) training of personnel,
(f) research and evaluation, and
(g) involvement of other institutions and agencies.

Sponsorship

This project is the result of an agreement signed between the Netherlands Foundation and the Government of India, Ministry of Health, New Delhi.

Source of funds

Funds are provided by the Netherlands Foundation on specific terms i.e. only for programmes in the selected block connected with health, education and nutrition. According to the agreement signed, programmes initiated by the project would be implemented by the existing staff of the block, district and specialised institutions. Only such programmes will be taken up that are repeatable and within the resources of the people and the block. According to the agreement, programmes that are successful and that fall in line with the policy of the government will be taken over gradually or in a phased manner from the project. Funds from the Netherlands

Foundation are provided for the nuclear staff of the project as well as for programmes of experimentation, research and training.

Coverage

Initially it was planned to conduct this experiment in the Block of Chevella which has a population of 1,17,000 and an area of 961.9 sq. km. The present strategy is to focus attention on programmes of health, education and nutrition in four subcentres which cover a population of 45,761 in 47 villages.

Services and benefits provided and the health component

Impact of first phase

In the first three years the Project has been able to cover 6,965 children in a population of 33,756. Regular medical care, immunisations and distribution of nutrition supplements (Hyderabad Mix) have resulted in eradication of malnutrition in nearly 7,000 children. These have shown significant improvements in their growth as compared to others. Due to regular child care 212 mothers have volunteered for a permanent method of family planning in one year. After a summary evaluation of the activities of the project at the end of 1972 a new course of action was designed in order to widen the scope of the project to include activities other than health.

Some of the strategies implemented in the project are :

(a) Training of well qualified workers to carry a part of the load of the child health schemes.

(b) Transfer of work being currently done by the Niloufer Hospital team to the Primary Health Centre (PHC).

(c) Linking of *Mahila Mandals* with economic projects such as preparation of protein packets and spice packets.

(d) Direct involvement of the mothers in the preparation of supplementary food for their own children.

(e) Experimentation with different types of preschool education programmes.

(f) Starting of dairy and poultry units on a small-scale to encourage small families to learn the mechanics of such endeavours.

(g) Establishment of creches, nutrition demonstration units, vegetable and fruit gardens.

Role of Niloufer health team

The Niloufer health team consists of Professor of Social Paediatrics, one Assistant Professor of Paediatrics, one Assistant Professor of Obstetrics

and Gynaecology, one Assistant Professor of Preventive Medicine, one Dietician, one Public Health Nurse, one Health Educator, and Post-graduates in Paediatrics. They visit the subcentres twice a week.

The services provided are :

(a) Curative services to the children who are ill; (b) Immunisations; (c) Antenatal, Intra-, Post-natal services; (d) Nutrition services; (e) Health education.

In addition, they are responsible for training ANMs and doctors, both undergraduates and post-graduates.

The ultimate object of the team is (1) to see that the PHC staff are so strengthened as to take over the work initiated by the team in the subcentres and (2) to encourage the Auxiliary Nurse Midwives (ANMs) in the subcentres to attend independently to cases listed out in the standing instructions without the aid of the Niloufer team. At present the subcentre at Shankerpalli is being managed independently by the PHC staff. After completion of these tasks, the Niloufer health team can be withdrawn from the present subcentres and sent to new subcentres.

The ANM experiment

Realising the potential of the ANM to undertake a wide range of preventive health caretasks, the Andhra Pradesh Government has agreed to reduce her responsibility from 10,000 population to 5,000 in the four subcentres. A systematic reporting system with simplified growth cards and family folder have been provided to the two ANMs at each subcentre so that they could have a clearer picture of the families entrusted to them. The area to be covered by each ANM has been mapped out and a cycle is being provided to her. To achieve the above objectives, specially trained ANMs have been posted to the four subcentres of Kanakamamidi, Tadlapalli, Maharajpet and Dhobipet, at the rate of two ANMs per each subcentre. Each ANM is assigned a population of 5,000. For home visits, the ANMs have been equipped with specially designed kits with teaching materials. The ANMs are being guided by the Niloufer health team and the PHC doctors.

Hyderabad Mix

The Hyderabad Mix is a nutrition supplement prepared from locally available ingredients, the composition of which was evolved by the National Institute of Nutrition. The mix contains *jowar*, bengal gram, groundnut or cowpeas and *jaggery* in the proportion of 4:2:2:1. The protein content of these packets is 10 gm. with 250 calories and 50 international units of vitamin A. The Hyderabad Mix was distributed among children and expectant mothers during the weekly clinics. This supplement has been effective

in reducing the oedema fluid in the first week; increasing weight from the second week with the disappearance of oedema, subsidence of diarrhoea and puffiness of the face. The average increase in weight among children who consumed the mix was 0.66 kg. Once the mix became popular among the villages the dietician of the Niloufer hospital team demonstrated the method of preparing these packets to the members of the *mahila mandal* in the villages of Kanakamamidi, Maharajpet and Shankarpalli. The preparation of these packets is supervised to ensure cleanliness, quality and the right proportion and weight. The packaging is done in polythene bags which are sealed by a candle flame. The packets are stored in tins and can be preserved for at least three months. A profit of five paise per packet is the incentive for the *Mahila Mandal* members to prepare the mix. The cost of production, excluding the incentive to the *Mahila Mandal* members, works out to 25 paise. From August 1974 the *Mahila Mandal* members have been able to produce the required quantity of protein packets for the weekly clinics. As methods of production improve the protein packets may be supplied to outside agencies also on payment.

Health coverage

The paediatric and obstetric clinics held by the Niloufer team in the four subcentres and the PHC at Shankarpalli were 215 in 1974, 202 in 1975 and 98 up to June, 1976. The total number of children treated at the paediatric clinic during 1974 was 17138, while it was 18679 in 1975 and 7785 up to June 1976. These inlcude cases that have visited the clinics more than once.

The total estimated child population under six years of the entire Block, according to 1971 census is 20,270. The project area covers only 47 villages for which the estimated child population under six years is 7,898 in addition to which the villages under the PHC have a total of 2,248 children under six. The total number of children treated in the five clinics so far exceeds the number of the entire child population of the Block. But this figure represents the children who have visited the clinics more than once as well as children from outside areas.

Individual families contribution

A very nominal amount of Rs. 0.50 is being collected for registration by the mother and children in the clinics. Even one time collection from families resulted in realisation of an amount of Rs. 4,999.75, which is a clear indication of the willingness of the families to pay for quality services. This amount has been credited to the local post offices in the subcentres.

Training of dais

Results of a baseline survey showed that 80-85 per cent of the deliveries in this area were being conducted by untrained indigenous *dais*.

Realising the importance of this category of personnel, the ANMs were asked to survey and report the number of trained/untrained *dais*. A condensed course of training of one month for the *dais* was prepared with the help of the Medical Officers of the PHC and the Assistant Director, Meternal and Child care and conducted at the PHC campus at Shankarpalli itself. This intensive course consisted of 30 theory classes and 20 practical demonstrations in areas of mother child health, control of communicable diseases, treatment of minor ailments, and collection of vital statistics. The *dais* were made to conduct deliveries under the supervision and guidance of the Lady Medical Officer. Four Health Visitors also assisted in conducting the practical and theory classes. A second batch of 17 *dais* was trained at Kanakamamidi in February, 1975.

Family planning services

The family planning drive was very encouraging in this area which obviously was the result of improved MCH services. About 35 per cent of the eligible couples of a priority group (with three children and more) have been sterilised in this Block. Amongst the family planning methods, female sterilization seems to have been more popular. Table 1 shows the number of operations performed in PHC Shankarpalli since the Project has been functioning :

Table 1—Number of sterilization operations performed.

Year	Vasectomy operations	Tubectomy operations
1970-71	95	134
1971-72	45	262
1972-73	700	218
1973-74	9	196
1974-75	—	205
Up to June 1976	N.A.*	111

*Not available.

The total number of women who attended the obstetric clinics from the villages in the project areas is 7,456 in 1974, 9,497 in 1975 and 5,340 in 1976, up to June. These figures include cases that have visited the clinics more than once. One of the significant features of these child care programmes is the spontaneous acceptance of the limitation of family to three because of child care. While the number of tubectomies performed and the tubectomized cases seen during 1974 were 240 and 1,438 respectively, they were 205 and 1,984 in 1975 and 111 and 1,325 in 1976, up to June. The antenatal cases treated during 1974 were 3,826, during 1975 were 4,801 and up to June 1976 were 2,946.

Multipurpose Health Worker Scheme

The ANM experiment which originally limited to four subcentres is now being extended to the entire block under multipurpose health workers scheme. The working group consisting of representatives from the Departments of Family Planning, Maternal and Child Health (MCH) and NSEP, the District Medical Officer of Health (DMOH), PHC and the Niloufer health team have divided the entire population of the block consisting of 1,20,000 into units of 5,000 each. The block will now have 24 subcentres each catering to a population of 5,000 manned by a male and a female health worker. Six zones have been formed for 12 male and female health supervisors. Each zone will cover four subcentres. For this new scheme which is to be implemented in early September 1976 special kits have been designed for each worker. The system of recording and reporting has been simplified and a monitoring system is being designed to be implemented by the Niloufer Health Team in collaboration with the district and PHC Medical Officers.

Gram svasthikas

Past experience has proved that due to cultural gap between the Government Workers and the illiterate and superstitious rural families, it is not always possible for programmes to be implemented effectively. One significant experience gained in the project in the past 7 years has been to emphasise on local initiative and to build up a local voluntary structure that could support the Government structure, to make it more effective. To make the Multipurpose Health Workers Scheme effective an experiment of training a local woman who has passed 5th grade to function as a link between the Paramedical Staff and the rural families is being tried out in Chevella Block. This village Health Agent has been named as "GRAM SVASTHIKA" who has been assigned simple functions of maintaining lists of pregnant and lactating women, malnourished children, details of births and deaths and minor ailments. So far 40 Gram Svasthikas have been trained at the block out of whom 20 have been selected and posted to work in their respective villages with an honorarium of Rs. 30 per month.

Training

The activities and programmes initiated by the project have proved extremely useful for imparting practical training to different categories of personnel and students of other courses.

Preschool Child Education (Balwadis, Nursery Schools)

As a part of project activities, *balwadis* are set up in selected villages of Chevella Block to encourage healthier children in the community and to reduce preschool mortality by 40 per cent. *Balwadis* are being used to pre-

pare children for the primary school and to educate the parents on child care and nutrition.

Children of the age group of two and a half to five years are taught personal hygiene, cleanliness and discipline. The *balwadis* provide an integrated approach to health, education and nutrition. Most of the children in *balwadis* have gained weight and are in good health. Approximately 10 to 12 children from each *balwadis* were being sent to the primary school every year. The primary school teachers were impressed with the *balwadis* children for their knowledge and better sense of cleanliness.

There are nearly 600 children on roll at the 12 *balwadis* with an average attendance of 442 children (74 per cent). During the month of June 1976, out of 138 children who reached the age of five years, 101 (73 per cent) were admitted to primary schools. During this year 159 children were freshly admitted to the *balwadis* only after their parents signed the agreement wherein the following conditions were laid down to instil the feeling of sharing and partnership.

1. Payment of a contribution of 50 paise per month or *Jowar* or any other grain per year or to help in the kitchen in the preparation of midday meals for four days in rotation.
2. To send the child regularly and on time to the *balwadi* without the assistance of the helper.
3. To visit the *balwadi* and observe the activities if called upon to serve as a member on the mother's committee.

The midday meal consists of 80 gm of *uppma* made of *balahar*, 100 gm of green leafy vegetables daily and an egg and about 125 ml of milk once a week. Mothers' committees with four to five mothers were formed in each village to observe the preparation and to supervise the feeding.

The contributions in cash amounting to Rs. 3,286/- have been deposited in the post offices under savings bank account. The contributions received in kind are used for the midday meal during the period when there is a gap in the receipt of CARE material.

Mother Teacher Training Course

One of the main objectives of the project is to encourage local women to assume responsibilities for child welfare. This approach will also offset the accute shortage and turn over of *Balsevikas* in the area.

In view of these problems a new step was taken by training young local mothers who have passed the fifth grade to work as assistants to the *Balsevikas* and craft teachers to ensure continuity, in cases of absence and

other changes. One month's comprehensive training programme provided the mothers an opportunity to develop skills in teaching children, cooking midday meals, preparing toys and visuals for teaching material. After completing these courses some of them have been appointed as assistant *Balsevikas*, while the others have taken over independent charge of the *Mahila Mandal* as craft teachers.

Model Balwadi-cum-field Training Unit

Four of the 19 mother teachers trained at Chevella have been appointed to run the model *balwadi*-cum-field training unit under the supervision of a lady supervisor. In all 100 children have been admitted to this *balwadi* where the mothers, by rotation, cook the midday meals. The parents are contributing 50 paise per child per month.

The main objective of this model *balwadi* is to experiment with mother teachers under the direct supervision of a trained worker. While running this *balwadi*, opportunities of practical training could be provided to *Balsevikas* and mother teachers who are already working in other villages and need inservice training periodically. A building to house the model *balwadi* with facilities of cooking, washing and bathing, along with a training unit for six *Balsevikas* with quarters for the lady supervisor, is under construction.

Creche

The main aim of the creche is to provide demonstration of child care to mothers and to involve mothers in the preparation of supplementary diets with local ingredients and to improve the health of the children under five. Mothers working in field of the village of Kanakamamidi requested the facility of a creche in their village. After scrutiny 20 out of 29 mothers, who were interested in the creche, were provided help. The local *panchayat* had agreed to construct a room with a kitchen for the creche and provide local helpers to run the creche.

Longitudinal Studies

The Principal of the College of Home Science who is the Convener of the working group on the creche has held meetings to study the progress of the children.

Mahila Mandals

The main objective of encouraging the *Mahila Mandals* (womens club) is to help educate rural housewives in programmes on health, education, nutrition and child care through adult education and projects to provide supplementary income.

There are 12 *Mahila Mandals* in the project villages with a membership of 175 women, out of which 112 visit the *Mahila Mandals* on an average. Four trained craft teachers, one part-time craft teacher and seven mother teachers are running these *Mahila Mandals.* The members are taught embroidery, tailoring and cooking The project has been supplying sewing machines to the members of the *Mahila Mandals.* Members who want these machines have to deposit an amount of Rs. 100/- and pay the balance in eight to ten instalments. Besides, the project has initiated certain economic schemes such as preparation of spice packets, protein packets, stitching of uniforms for *balwadi* and creche children and bangle making. From the making of packets the project earned a total profit of Rs. 2760.73.

Handicrafts

Handicrafts, youth clubs and key village scheme for intensive cattle development are other developmental schemes initiated by the project.

The cattle breeding scheme envisaged such components as breeding, feeding, management, disease control and marketing.

In addition to these, individual dairy farming schemes have been initiated in which farmers are advanced loans from the Hyderabad District Cooperative Bank with the understanding that if the entire loan is repaid the amount will be either returned to the project or given to other farmers as loan.

Individual Dairy Farming Scheme

It was expected that this scheme would assure a regular supply of milk to the creche and *balwadis* and would also result in the improvement in the economic status of farmers. So far 27 farmers have been given Rs. 1800.

Individual Backyard Poultry Unit

A scheme of individual backyard poultry units has been started to help economic upliftment and nutrition programmes through *Mahila Mandal* members. The Hi-Line, Hi-Bred Pvt. Ltd. of Karnal agreed to supply one day old chicks at 50 per cent discount. Accordingly a chicken rearing centre was established at Shankarpalli. Two consignments of 306 and 456 birds were received on 26th August and 2nd September 1975 respectively from Karnal by air. These birds were kept under the charge of the Special Block Development Officer, Shankarpalli who is also a trained veterinarian. Six poultry units with 100 birds from this centre have been started. The farmers are repaying the amount by supplying eggs to the *balwadis.* It was found that birds grown at this centre are in good demand.

Hence a third consignment of 300 one day old chicks was obtained from the above firm and are being reared at Shankarpalli.

Nutrition Demonstration Unit

The main objective of this unit is to establish a chain of demonstrations from cultivating the required crops by the farmers, utilising the produce in the preparation of midday meals, supplementary foods and protein packets by the members of the *Mahila Mandals* and organising an effective nutrition education programme to educate the village community by the *Balsevikas*, craft teachers and the ANMs.

The efforts made in this scheme are unique because of the cooperation of the dry farming project team of the Indian Council of Agricultural Research, the extension team of the A.P. Agricultural University and the College of Home Science. As a result of the several meetings held by this working group the cropping pattern has been tailored to the requirements of the *balwadis*, creches and clinics keeping in mind the type of soil, irrigation facilities etc. As a result, instead of using groundnut in the Hyderabad Mix, cowpeas have been substituted because of the lack of irrigation facilities in the area. A new type of soyabeans has been introduced along with the latest dwarf varieties of *jowar*, *bajra* and other crops. The specific objective in designing the grouping pattern is to convince the farmers that in spite of lack of rainfall, irrigation facilities, and fertile soil, suitable crops can be grown even with limited facilities available.

Personnel Facilities and Resources

One of the basic objectives of this project is not to create a separate hierarchy and to avoid duplication. Its main policy is to utilise the existing structures and institutions. The Indian Bureau has a Director on deputation from Government of India with a nuclear administrative staff. According to the agreement, the State of A.P. has deputed a Special Block Development Officer who is stationed in the field. For the health component, the State Government has deputed Health Visitors and ANMs. Most of the work of the health component is undertaken by the Niloufer health team. The staff of the Block including the Medical Officers of the PHC are utilized for the programmes of the project which fall in line with the main working of the block.

The project provides transport, equipment, facilities for research and other *ad hoc* inputs that do not fall in the line of supply by regular sources. The government as its share provide the use of personnel and land wherever necessary and technical expertise already available at the block, district and state level.

Mode of payment for personnel

Funds are made available from the Netherlands Foundation for salaries and remuneration for the personnel utilised either in a regular or on an *ad hoc* basis.

Factors affecting quality of services and difficulties faced

Major factors retarding the progress of the project are problems in changing attitude of the people on greater participation and involvement. The local leaders and families still continue to depend on government for everything.

Other problems are wide area allotted to each worker and the inherent problems connected with health, education and nutrition.

Methods of enforcement of control

At the block level, in addition to regular visits by the Special Block Development Officer, the Niloufer health team and the project staff monthly meetings are held in rotation at every unit. In these meetings, the work is reviewed of all concerned personnel, problems discussed and suggestions made to improve efficiency. A system of incentives and disincentives is being introduced to encourage the workers towards greater interest and enthusiasm.

Evaluation

The National Institute of Community Development (NICD) has been entrusted with the evaluation of the work done. The baseline survey has been prepared before the project programmes were initiated. At present the NICD is completing its evaluation report on the health component.

Village Child Care Centre Project

CHILD CARE CENTRES IN ONE HUNDRED AND FORTY SIX VILLAGES

G. VENKATASWAMY*

Background

In India, nearly 80 per cent of the population live in villages. For want of proper health care, the infant mortality and childhood mortality are very high. In the Eye Department, Government Erskine Hospital, on an average, 200 children of preschool age are seen every year with Keratomalacia leading to total loss of vision. In the Paediatrics Department, Government Erskine Hospital, during the year 1972 a total of 841 children were admitted for severe protein calorie malnutrition (PCM) forming 15.4 per cent of all admissions; out of them 17.1 per cent died, most of them within 24 to 48 hours after admission. There are a few follow-up studies of Kwashiorkor which showed a high rate of relapse. Fifty to 60 per cent of them died after discharge from hospital.

At the World Assembly of the World Council for the Welfare of the Blind held in New Delhi during October 1969, Dr. G. Venkataswamy presented a paper on "Malnutritional Blindness in Asia, Africa and South America". As a sequela the Nutrition Rehabilitation Centre attached to Government Erskine Hospital was started on 14th January 1971.

Objectives

1. To evolve a proper low cost nutritious diet to cure malnutrition and malnutritional eye diseases.
2. To obtain knowledge which will provide guidelines to start similar nutrition centres in villages.
3. To build-up this centre into a teaching and training institution for basic workers in medical, paramedical and the education departments.

With the experience gained through the work at Nutrition Rehabilitation Centre and the encouraging results in the treatment of malnutritional

*Dr. G. Venkataswamy, Director, Nutrition Rehabilitation Centre, Government Erskine Hospital, Madurai (Tamil Nadu).

This paper was presented by Dr. K. A. Krishnamurthy, Honorary Director, Nutrition Rehabilitation Centre and Child Care Centre, Madurai Medical College and Govt. Erskine Hospital, Madurai.

eye diseases and severe (PCM) using low cost, locally available diets, a scheme for extension into the villages was started in three Panchayat Blocks in the year 1972.

Definition of the scheme

The strategies adopted to achieve the objectives were :

1. To establish the general health and nutrition status of children in the community through nutrition and morbidity surveys ;
2. To educate mothers on proper nutrition of preschool children through feeding demonstration ;
3. To provide treatment for common illnesses of children by trained child care workers under the guidance of a doctor ;
4. To achieve full immunisation of all the children ;
5. To bring down the mortality and morbidity within a specified period ;
6. To provide road to health cards for all children below five years for follow-up ;
7. To act as a basic health unit to make referrals to Primary Health Centre (PHC) and above ;
8. To train paramedical workers including village health workers (VHWs) ;
9. To expose medical students and house surgeons to the problem of community medicine ; and
10. To improve the care of pregnant and lactating women and make them accept family welfare programmes in the long run.

Sponsorship

The scheme has been sponsored by the Department of Social Welfare and Department of Health, Government of Tamil Nadu.

Source of funds

Funds for the scheme have been provided by the Department of Social Welfare, Government of Tamil Nadu.

The Associated Country Women of the World through the Royal Commonwealth Society for the Blind, London meets a portion of expenses under the 46 villages scheme in one block (Tiruppuvanam).

Coverage

The following three Panchayat Blocks in Madurai and Ramnad districts were covered :

Block	*District*
(i) Madurai West	Madurai
(ii) Natham	Madurai
(iii) Thiruppuvanam	Ramnad

The other relevant particulars of the blocks are given below :

(i) Total population in all the three blocks	2,70,332
(ii) Total pre-school children population	42,012
(iii) Total member of pre-school children examined	6,458
(iv) Total number of pre-school children included in feeding programme (pre-school children with Grade III and II PCM with or without Xerophthalmia)	3,361
(v) Total number of pre-school children provided with "Road to Health" Chart only	5,162

Background information regarding health and nutritional status of the population in the target area

Preliminary nutrition and health survey : Out of a total of 10,001 children under the age of five years, 6448 have so for been surveyed in 44 villages in the three blocks.

Nutritional status : The prevalence of PCM is shown in Table I and specific nutritional deficiency signs in Table II.

Table 1. Prevalence of PCM as per Gomez classification.

	Percentage of children
1. Normal (100 per cent of the expected weight for age)	3.6
2. Grade I (75 to 89 per cent of the expected weight for age)	25.5
3. Grade II (60 to 74 per cent of the expected weight for age)	54.5
4. Grade III (below 60 per cent of the expected weight for age)	16..4

Table 2. Prevalence of specific nutritional deficiency signs.

Age in months	Conjuctival xerosis	Bitot's spots	Night blind-ness	Vitamin B deficiency angular stomatitis	Phryno derma	Total number of children examined
0-12	25	—	—	2	—	283
13-24	72	8	1	21	3	443
25-36	114	17	3	72	7	486
37-48	120	30	6	95	11	443
49-60	95	22	4	74	12	278
	426	77	14	264	33	1933
Per cent	(22)	(4)	(0.7)	(14)	(1.5)	

It would be seen that only 3.6 per cent of village children are normal and the rest suffer from different grades of malnutrition. The most striking feature is that about 16.4 per cent of the village children are in a bad state of nutrition, this in turn getting aggravated by frequent illnesses (Table III).

Table 3. History of general illnesses of children.

Age in months	Scabies	Respiratory infection	Worm infestations	Gastro-intestinal trace infections	Other
0-12	15	31	—	4	30
13-24	35	35	—	9	57
25-36	16	33	3	7	68
37-48	20	42	5	4	57
49-60	11	22	3	1	11
Total	97	163	11	25	223

Demonstration feeding

The feeding is done on selective basis for a fixed period of time. During the initial nutrition and health survey, pre-school children with Grade III PCM with or without Xerophthalmia and admitted first, followed by Grade II PCM. Occassionally a child in Grade I with obvious signs of Vitamin A deficiency may be admitted. These children are fed with food prepared at the centre. The ingredients are locally purchased. The preparation is also done in the local traditional way using the same type of kitchen, cooking vessels etc. The children bring their own plates for eating. They are provided with 3,000 international units (i. us.) BETA carotene and 2/3 requirements of proteins and calories from exclusively vegetable sources. The average feeding cost for each child per day was about 65 paise during the year 1975 and has come down to about 50 paise now (1976).

Treatment of common diseases

Treatment of common ailments of the whole population is done by providing free medicines and referral services when required. The following drugs are available with the *Balsevika* :

Sulphadiazine	Tablet
Sulphathalazole	Tablet
Penicillin	Tablet
Aspirin	Tablet
INH	Tablet
Piperazine Citrate	Syrup

Ointment	Sulphur
Tetracycline	Eye Ointment
Chloromycetin	Ear Drops

Initial diagnosis is made by the Paediatrician during his weekly visits and a course of treatment is advised by him to be continued by the *Balsevika*. On other days, the *Balsevika* herself makes the diagnosis and starts treatment. Emergencies and cases not responding to her treatment are either referred to the local PHC or Nutrition Rehabilitation Centre, Government Erskine Hospital for referring them to the various departments of the hospital.

For chronic illnesses like tuberculosis and leprosy the follow-up treatment of the cases is assisted by the *Balsevika* and the Paediatrician when difficulties arise—such as failure to get the monthly supply from the allotted dispensary, discontinuing treatment on their own. For some cases in the remote villages, the supply of drugs is obtained by the Paediatrician and his team from the Government Erskine Hospital and delivered to the concerned individuals either directly during his visits or through the Balsevika. Such acts of sympathy enhance the prestige of the *Balsevika*, among the village communities, apart from ensuring regular treatment of chronic illnesses, which is otherwise an unlikely event with the present medical set-up with little chance for follow-up of cases in the community.

Immunisation

Primary vaccination and BCG are delayed beyond the neonatal period since most deliveries still take place in their homes. As BCG is available only at the head quarters hospitals and with BCG teams attached to them, the personnel of the scheme have a limited role to play regarding BCG immunisation. Regarding triple antigen and oral polio drops, the department of Paediatrics, of the hospital arranges periodic massive immunisation programmes in the villages. Two such campaigns were arranged-one during the year 1973 and another during July 1976 in the villages served by Child Care Centres. Since the supply of the vaccine is most erratic and sometimes it is impossible to ensure availability even at a cost, immunisation coverage has not been to the desired extent. The coverage provided by the local PHC has not been widely felt at the remote villages for obvious reasons.

During 1975, with collaboration of Paediatrics Department, 500 children were immunised against poliomyelitis in three villages in Thiruppuvanam Block. An intense immunisation campaign was organised in collaboration with Department of Paediatrics, District Family Planning and Maternity and Child Welfare Officer, Panchayat Union and Indian

COMMUNITY HEALTH CELL

Medical Association (Madurai Branch) from 3rd to 8th July 1976, covering five villages in one block. The following is the coverage :

	No. of children
Oral polio vaccine	= 483
Triple antigen (Restricted to children below four years)	= 339
Double antigen	= 66

Nutrition and health education of village mothers

The main purpose is to give health and nutrition education to mothers of malnourished children admitted for demonstration feeding. This is done over a three months period when they come to the Child Care Centre along with their children. The *Balsevika* talks to them daily between and during feeding times using posters and charts and drawing examples among the children assembled along with their "Road to Health" charts. The same is reinforced by the weekly visits of the Paediatrician and his team which includes a Public Health Nurse and a Nutritionist. They also talk to the mothers individually when they come with specific problems. Whenever possible small nutrition health exhibitions are arranged to coincide with local festivals. Filmshows showing severe PCM, Keratomalacia and the difficulties encountered in the management of such children even in large hospitals are highlighted. For a majority of working mothers who find it impossible to visit the Child Care Centre during day time, the *Balsevika* makes house visits late in the evening to talk to them individually in an informal way. The mothers are appreciated when they adopt good practices like the use of greens, pappaya etc. in their menu. They are encouraged to supplement their children's diet by feeding "*Kanchi*" or "*Puttu*" made from local cereals along with breast feeding. She also advises regarding immunisation and provides them with "Road to Health" charts for nutritional assessment and follow-up.

Role of Mahalir Mandram etc.

Periodically the Mukhyasevika convenes a meeting of conveners and active members of *Mahalir Mandrams* of five or six villages. From July this year, the Paediatrician and his team participate by spending about half a day with them when they talk to the women about nutrition and health through the use of posters, charts and slides. The film on malnutrition is also screened whenever possible. The members are encouraged to narrate their own experience and clear their doubts.

The Deputy Director, Agriculture Farmers' Training Centre, Agriculture College and Research Institute invited the team members to take

part for a whole day out of three day camp he organised periodically at the taluk level. He has a mobile unit with necessary field staff and audio-visual aids. Efforts are under way to include basic knowledge about normal nutrition and nutritional deficiency symptoms in the information materials prepared and distributed by the District Agriculture Information Unit in Madurai district. The State Director of Agriculture has been requested to extend such activities to the whole state.

Village Health Worker

The VHW is a local middle aged women, usually the local *dai* or a prominent women recommended by the villagers themselves. She is given two weeks' training at the Nutrition Rehabilitation Centre, Government Erskine Hospital, in basic child care and nutrition, immunisation, diagnosis and management of common illnesses in children and adults. There are now six VHWs continuing the work of the *Balsevika* without actual feeding programme in six of the villages in Tiruppuvanam Block.

The advantages of such a worker are :

1. She is a permanent agent for curative care at the village level;
2. She is a more effective agent since she understands more closely the local beliefs and customs. She is trusted by them; and
3. She acts as a permanent focus for community awareness and is committed to improve the health care using the available resources.

The community participation is continued in the health programme since the medicines are supplied at cost price and a revolving fund is thus created.

By selecting the 'Right Woman' and training her in a more practical and meaningful way, her capacity to provide basic medical and health care to her limited circle is made very easy. To have lasting effect, she is carefully supervised by weekly visits by the Paediatrician and his team She comes to the Nutrition Rehabilitation Centre for additional training once a month for two days. Her usefulness can be increased, once there is meaningful cooperation between the PHC staff and herself. An enlightened community itself can supervise her activities to a large extent.

Training of Interns

Field Training is given to medical interns and postgraduate students in the departments of Paediatrics, Obstetrics and Gynaecology, etc. From February 1976, a batch of 10-12 House Surgeons are posted for a period of 10 days during their three months training in Preventive and Social Medicine. For the first time in their 5½ years medical education, these

young doctors gain firsthand knowledge about social and environmental factors contributing to diseases. Most of them show keen interest in the activities and express their satisfaction at the end of the training. They also learn preventive medicine by actively involving themselves in arranging immunisation of preschool children in the Village Child Care Centres.

The *Balsevika* trainee during the last 10 days of her three months' training is posted to a Child Care Centre and she stays there for the whole period and she comes to know the problems in the field in providing total child care. Similarly, other trainees also make one day visit to Child Care Centre to observe the working and acquaint themselves with the records kept by the *Balsevika* and how they are supervised.

Care of pregnant and lactating mothers

Recently the Additional Professor of Obstetrics and Gynaecology, Madurai Medical College, has started sending one of her Assistant Professors, two post-graduate students and two House Surgeons once a week along with the team to the villages. By prior information the *Balsevika* and local Auxiliary Nurse Midwife (ANM) collect as many pregnant and lactating women as possible and some of the mothers who had undergone sterilization operations in the Child Care Centre. This team of experts examines each one of them and tenders suitable advice. Cases requiring detailed investigations are advised to come to the department in the Government Erskine Hospital during their outpatient department (OPD) days. For easy identification a card with a brief referral note is given to each mother. Cases which could be managed by the ANM or at the PHC level are advised accordingly. The work has been limited to two villages in Madurai West and Thruppuvanam Blocks. The team of lady doctors show great interest and greater involvement of the Obstetrics and Gynaecology Department is likely in the near future.

Family planning services

Though proper child care practices include spacing and limitation of family size, the child care centres do not directly involve themselves in family planning programmes for well known reasons. But, recently the Associate Reader in Obstetrics and Gynaecology in-charge of family planning has started accompanying the team to the villages for advising mothers on various family planning practices. So far there have been no acceptors as the programme was initiated hardly two months ago.

Production of nutritious vegetables, greens etc. Participation by Department of Agriculture

Yet another addition to the extension activities has been the involvement of the Agricultural College and Research Institute, Madurai by

sending its Horticulture. Animal Husbandry and Poultry experts to one village to encourage the local farmers to produce more greens and common fruits and raise more poultry and dairy units. The enthusiasm shown by the local people is encouraging. Unfortunately the work could not be given a start for want of rains till the last week of July, 1976.

The following personnel are involved :

(i) Honorary Director	1
(ii) Tutor in Paediatric Medicine	2
(iii) Public Health Nurse	2
(iv) Nutritionist (in 100 villages scheme only)	1
(v) Clerk-cum-typist	1
(vi) Driver	2
(vii) Balsevika (Child Care Worker)	23
(viii) Cook	19

Facilities

The Nutrition Rehabilitation Centre, Government Erskine Hospital serves as a training ground for the Balsevikas, VHWs etc. in close association with the departments of Paediatrics, Ophthalmology, Obstetrics and Gynaecology and other special departments like Skin, Ear Nose and Throat (ENT) etc. The Paediatric Department sends its post-graduates during survey work, immunisation campaigns and other special occasions in the villages.

Since Madurai happens to be district headquarters for both Madurai and Ramnad districts, most of the offices are located in one place. In addition, the District Agriculture Office, Panchayat Union Office of one of the three blocks are also at Madurai. The Agricultural College and Research Institute is also situated within a short distance.

As the residential quarters previously occupied by the last grade servants of the hospital were vacant, the offices etc. could be located within the hospital premises without any expenditure on building construction. Two Standard 20 vans are provided for field visits.

Resources (Financial)

The recurring and non-recurring expenditure is met by the Social Welfare Department of the Tamil Nadu State.

Mode of payment for personnel

The Honorary Director is the drawing Officer at the headquarters.

The staff at the headquarters are paid on the first of each month. The *Balsevikas* and cooks are paid by the Paediatrician during his visits. So, in some cases they get their salary with a delay of four or five days.

Factors affecting quality of services

Feeding programme : This is arranged at the village level by purchasing the food articles, fuel etc. from the village itself. The *Balsevika* starts with a stock of food articles sufficient for a week or 10 days. She keeps an advance of Rs. 100/- with her and the same amount is recovered during the visit of the Paediatrician. Sometimes there may be a delay of a week or 10 days between the visits when the *Balsevika* resorts to borrowing from the local shops. But at no time the feeding has been discontinued for want of money.

Even though the cereals and pulses are freely available, fresh vegetables, (including brinjal) greens become a rarity during major part of the year. Drumstick leaves though grown are not available for sale as the villagers are keen to make more money from selling the drumsticks rather then the leaves which fetch them less. Other vegetables are also sold in towns.

During the initial stages, there was also some misbelief about the foods served to the children. Some even believed that some unknown substances mixed with foods would make their children sterile permanently. False beliefs like these are mainly due to illiteracy and suspicion with which they view external intervention in their isolated way of life even though the intentions may be good.

Road communications

The two blocks in Madurai district are having fairly satisfactory road connections. But Thiruppuvanam Block in Ramnad is ill-served by motorable roads and sometimes it takes more then two to three hours to reach a particular village. The situation becomes worse during rainy season.

Per capita income

In Ramnad district the per capita income is comparatively low and the severe and successive droughts during the last two years have made the situation worse. Similarly, Natham Block consists of mostly dry lands where even the cheap local diets advised and demonstrated by the Child Care Centre are not practised by many. Sometimes their only diet consists of one or two millets like maize flour or *Bajra* or *Ragi* without any other item of food.

Use of groundnut cake

Though many agree in principle about the usefulness of groundnut cake in a low cost diet, the quality of the cake available in the market and its traditional use as a cattle feed or manure precluded its utility as a dietary supplement. In the near future, steps may be taken to produce better quality cake and ensure its availability.

Role of Balsevikas

To the extent possible the selection of *Balsevika* is done with great care. But some had to be sent out during the training period itself as they were too quarrelsome and not accommodative to the mothers in the Nutrition Rehabilitation Centre. A few, after working for sometime in the villages had to be transferred to other villages or sent out for misconduct or misappropriation of feeding cost etc. Payment of Rs. 20/- per month is too low for a village woman these days. This low salary results in frequent changes in cooks.

Medical care

Initially there was no separate provision for drugs in the budget. Based on field experience for about one year, a sum of Rs. 75/- was sanctioned towards expenditure on drugs per centre per month. During the last two years the sanction for the drugs could not be renewed leading to a temporary set-back even with regard to the nine basic drugs mentioned earlier.

Some of the *Panchayats* are so poor and ridden with local factions that they find it impossible to mobilise Rs. 300-500 to construct a thatched shed. In such cases a small hut with poor ventilation and lighting has to be accepted. Most of the villages are without protected water supply. The water source is mostly an unprotected well.

Follow-up

The VHWs are functioning only in six of the completed villages in one block. Rest of the villages are without them for the present. Since the staff are completely involved in supervising the existing 10 centres at the rate of two centres a day, they find little time to do any follow-up activities in the completed villages. At present there are 39 completed villages with a pre-school child population of about 7,200. The situation will change for the better, once adequate number of VHWs are trained and placed in the field. Efforts are on the way to impart training to the rest of the field staff from other departments like primary school teachers, ANM, Maternity Assistants, *Gramasevika* and other unipurpose workers in the three blocks.

Information support

Information from the mass communication media, like radio, newspapers etc., is negligible when compared to that given to agriculture.

Methods of enforcement of control

The Honorary Director is overall incharge for the programme in the three blocks and Nutrition Rehabilitation Centre, Government Erskine Hospital. He is assisted by Dr. S. A. Kabir, former Dean, of the hospital, who is coordinating the various activities of all other staff in the programme.

The Paediatrician, Public Health Nurse and Nutritionist form supervisory team placed at the headquarters. They make weekly visits to each Child Care Centre. Starting around 7.30 a.m. they visit at least two centres a day. At the first centre children are seen during their breakfast time. At the second centre, they are seen during their lunch time.

The Paediatrician looks at the attendance of the children at the centre during past one week and finds out reasons for non attendance from the *Balsevika.* He makes a rapid clinical examination and checks their weights in the "Road to Health" chart and scrutinises any medical treatment followed or initiated by the *Balsevika* since his last visit. Any specific advice on further treatment is recorded in the case sheet. Clinical improvement is recorded once a fortnight with specific reference to deficiency signs and symptoms like night blindness, xerophthalmia, angular stomatitis, anaemia etc. He also attends to any specific complaints made by the villagers or *Balsevika* or mothers. Finally he goes through the diary kept by the *Balsevika.* She records a brief summary of her daily activities, her own difficulties and particularly about the nutrition education given to mothers. She also records the diseases and treatment, she has followed and the progress made. The Paediatrician gives specific advice and modifies the treatment whenever necessary.

He also meets a few others like the primary school teachers, *Panchayat* councillors and *Panchayat* presidents whenever possible.

During the same time the Public Health Nurse checks the stock of drugs and talks to mothers about health and nutrition. She distributes drugs to each centre. She also checks the entries in the "Road to Health" charts of non-fed children. Personal hygiene of the child admitted for feeding is checked and the cleanliness of kitchen vessels and the immediate environment of the Child Care Centre are looked into by her.

The Nutritionist checks the stock prices and quality of the food articles. Also she verifies whether the food is cooked in the way advised to

retain the nutritive values. She also advises regarding the change or modifications in the menu and advises changes to suit the season and availability.

Balsevika visits the houses of children who are absent for feeding to find out reasons and talk to such mothers to ensure maximum attendance for feeding and education. All efforts are made before declaring a child irregular for feeding and his parents as resistant to changes for the better.

Balsevika prepares monthly reports which contain all the details of the fed children, their initial and final weights at the beginning and end of the month, the illnesses the child suffered and changes or persistence of the deficiency signs. If the child discontinues from feeding due to shifting the residence or non-acceptability of the food served or any other reasons is also stated. During the same period, number of pre-school children who were provided with "Road-to-Health" charts, prevalence of any infectious diseases like measles whooping cough, acute gastro-enteritis is also reported. At the end of every quarter, the reports from all the centres are consolidated and sent to the Director of Health Services and Family Planning and to the Secretary to Government Social Welfare Department.

The ultimate aim is to have an "Under Fives" register in each village in which all births are recorded along with their immunological status, nutrition and health problems. So, at a glance one will be able to know the number of children *at risk*, to formulate solutions and other remedial measures. When all such reports are pooled from the entire block, the supervisory authorities can modify plans for the future to get better and lasting results.

Evaluation

Benefits of the feeding programme

An analysis of 1,500 cases after about 100 days' feeding is given below :

Nutritional status before feeding		*After feeding*
	(Per cent)	(Per cent)
Normal	Nil	1.9
Grade I	10.3	31.6
Grade II	62.4	53.2
Grade III	27.3	13.3

As a result of this feeding programme, 46.4 per cent have improved in their grade of nutrition. Though the rest have maintained their original grade it only proves that they have at least kept pace in expected weight

increase. The most significant fact is that the number of children in Grade III and below have shown a two hundred per cent improvement, i.e., their percentage has dropped from 27.3 to 13.3 per cent. It is reasonable to assume that the morbidity and mortality rates also would have registered a fall by at least 25 to 30 per cent.

About 14 per cent of cases have been positive failures, in spite of this feeding programme, by manifesting frequent intercurrent illness. It appears that the children have not been fed at home in the night, as they have had their feeds in the centre at lunch time.

The continuous presence of a trained worker who can render some basic medical help all the time gives a sense of security to the village community. She is being supported by periodic and regular visits by a Paediatrician and his team and that too from a large medical set-up like a teaching hospital adds to the prestige of *Balsevika* to a great extent. When the local leaders come to know that the Child Care Centre is to be closed soon they start making representations to retain it as long as possible or get it located within their own *Panchayat* limits. In fact such persistent demands from the local people made the authorities to think about alternative lines which ultimately resulted in what is called the Village Health Worker (VHW) concept.

Reduction in Xerophthalmia

The Child Care Centres do not use preformed Vitamin A unless there is corneal xerosis, which was detected only on two occasions so far. Night blindness usually clears in two to three weeks time in majority of children. Conjunctival xerosis (like dryness, wrinkling, muddy discolouration) takes a longer time to disappear and Bitot's spots disappear completely only in 57 per cent of children at the end of feeding. In the rest the extent of the lesion comes down, but tiny Bitot's spots persist for some months after addition of adequate quantity of B Carotene in the diet. In a few children conjunctival xerosis appeared after they started putting on weight and disappeared subsequently on dietary management alone.

Effects of feeding on xerophthalmia-analysis of 1,465 children

Classification	*On admission*	*On discharge*
Night blindness	109	12
Conjunctival xerosis	1049	421
Bitot's spots	146	84

Conjunctival xerosis is found even in infants. Of the 2,000 infants examined 283 (14.2 per cent) had conjunctival xerosis.

Reduction in the prevalence of common illnesses

In one village, Keeladi in Ramnad district, the number of children reporting illnesses over a two years period is given below :

Illnesses	1973	1974
Respiratory infections	67	21
Diarrhoea	54	10
Skin infection	12	7
Measles	2	0
Worms	1	1

The above is compiled from the records of the *Balsevika* of the Keeladi village. There is no information regarding number of mothers who had been weaned from harmful practices like branding, *thokkam removal* etc. But the number would be considerable because of the easy and ready availability of proven remedial drugs at no extra cost.

Follow-up studies in villages where the Child Care Centre had been closed

In an attempt to assess the long-term effects of the programme, nine villages out of 15 in which Child Care Centre had been closed on or before May, 1975 were chosen for resurvey by an independent observer, Dr. Sheila Zurbring, M.D., DTM and H., from Canada. The resurvey was done before VHW Programme was conceived. The Centres were initially started 18 to 30 months previous to the resurvey. On an average, the interval between discharge of children and resurvey was 13 months.

Resurvey included

1. The Nutritional status of children in feeding programme and non-feeding programme;
2. A study of feeding habits and beliefs of their mothers; and
3. Their awareness of prevention of childhood blindness and mal-nutrition.

Of the original 537 children in the feeding programme in these villages, 383 were available for reassessment, 117 were out of the villages, 21 had expired and the remaining 16 were unavailable for reassessment.

A total of 451 children of non-feeding programme under six years were seen as well.

Results

The number of children in grades III was reduced by 55 per cent (from 32.7 to 14.8 per cent) during the feeding programme, but only 32 per cent maintained their progress at the time of resurvey.

The increase in the number of children in Grade I to normal range, was however maintained so that on resurvey the percentage is three times that at the beginning of the feeding programme (23.5 per cent compared to 7.5 per cent).

If the "successes" of the feeding programme are considered to be all children with improved nutritional grade as well as those who have maintained Grade II or above, the proportion of "successes" to "failures" with the programme would be 89 per cent (471 children) and 11 per cent (63 children) respectively.

Subsequent changes in nutritional status after discharge

If the "successes" in follow-up are considered to be those children continuing to improve as well as those maintaining in Grade II or above, 61 per cent (231 children) may be considered "successes" of the programme and 39 per cent (151 children) as "failures".

This appears to be a reasonably good achievement considering the drought in the area during resurvey.

Specific nutritional deficiencies

The improvement in deficiency sign rates was less marked and that may be due to :

1. Different personnel for initial and resurvey ;
2. Change in the criteria for deficiency signs ; and
3. Almost total non-availability of fresh vegetables and greens because of the drought.

Taking Bitot's spots alone as the sole indicator there was only marginal reduction from 10 per cent initially to 8.0 per cent at the time of resurvey. Whereas it remained at the same level (10 per cent) in the non-feeding programme children.

Awareness of prevention of blindness

When the mothers were asked during the resurvey what they could do to prevent blindness in their children, 66 per cent of mothers of the feeding programme children mentioned "greens", whereas only 30 per cent of non-feeding programme group had this knowledge.

Initiation of weaning

Both groups of the mothers were similar with respect to time of weaning and starting supplementary foods i.e. 19 per cent of feeding programme mothers and 14 per cent of non-feeding programme mothers did not start supplements until 24 months or later for the subsequent child.

In conclusion it may be stated that the initial effectiveness of the feeding programme in improving the children's nutritional status is considerable.

The number of children in Grade III was reduced by 55 per cent. The number in normal range and Grade I increased by three and a half times.

On long term follow-up, though the percentage of children maintained in the higher grade is similar to that on discharge, half of the children who initially improved from Grade II again slipped back into the same original level.

With respect to child feeding attitudes and practices, awareness of the importance of greens for the prevention of childhood blindness is significantly greater in the feeding programme mothers, but in practice these mothers do not actually feed greens oftener than the non-feeding programme mothers. This is reflected in the generally high level of vitamin A deficiency signs in the children on resurvey.

Hospital Based Projects

COMMUNITY HEALTH PROJECT

N. K. Bachan*

Background

As the tradition has been in most mission hospitals, medical care is given only to those who come to the Hospital. This hospital now is in the initial stages of a programme designed to provide basic health care at the community level itself, utilizing village health workers (VHWs) from the same community. These VHWs will be selected from the same village and trained by the hospital staff.

Lalitpur is a small district town, situated 90 km south of Jhansi, which is the southern-most part of Uttar Pradesh (UP). The climate is semi-arid with an average rainfall of 905 mm annually, the mean temperature is 25.5°C. The total geographic area of the district is 5,047 sq. km. The land is mostly rocky with up and down gradients. The agriculture is poor and mostly coarse grain is grown. The population of Lalitpur is 37,000. The hospital is 22 bedded and provides mostly maternity and general curative services with an emphasis during the past three years on maternal and child health care. The mobile curative work was being done in a number of villages for the past 25 years at minimum cost to the patients. Now it has been restricted to only those villages where the training of the VHWs is in progress.

Population of the district

The population of the district is 4,74,519 as per 1971 census. Population density is 94 per sq. km. The village Bastagunwa, where the VHW training is in progress, is 25 km from Lalitpur town.

Social cultural situation

The project area consists of a multicaste population with a predominance of lower castes. There is a lot of social distance between the castes (like all traditional societies in India), there is a devaluation of girls in terms of failure to provide timely medical care, early marriage and relative neglect. Indebtedness is rampant as the majority of population is poor.

*Dr. N. K. Bachan, Harriet Benson Memorial Hospital, Lalitpur (Uttar Pradesh). Medical Suptd. Director Community Health.

Dietary habit

Most of the people are vegetarian. People only get green vegetables in season, due to lack of irrigation facilities. Too much emphasis is given to the "hot" and "cold" effects of the vegetables. Even in the families of non-vegetarians, females are not allowed to eat meat, fish, eggs etc. The meat eaters are Thakurs and low caste people.

Hygiene

Soap is a curse in this area. People say that this has some chemical smell, causes eczema and only the fashionable people use it. The usual method of bathing is in a pond by applying a special type of mud or just having water bath.

Educational status

Educational status is very low for the whole of U.P. The literacy rate is 21.6 per cent. In the villages very few people have education up to primary level and beyond. Parents prefer their children to help them in the fields and add to the family's income.

Existing medical facilities

For the whole district, there are two general hospitals and one maternity hospital, all in Lalitpur town proper.

Hospitals-Government	1. General hospital (excluding maternity facilities) with bed strength of 50.
	2. Maternity hospital with 25 beds.
Non-Government	1. Charitable Eye Hospital with five beds.
	2. Harriet Benson Memorial Hospital (hospital where the study is being carried out)—general and maternity-22 beds.

Government primary health centres (PHCs)	6
Government maternal and child health (MCH) subcentres	18
Government family planning subcentres (out of these 14 are not functioning)	30
Government state dispensaries	7
Government Ayurvedic dispensaries	4

None of the hospitals, government or non-government, is fully equipped or staffed for major operations.

Number of doctors in Lalitpur town

Government hospital (for general duty)	2
(for administration)	2
Government maternity hospital	2
Harriet Benson Memorial Hospital	2
Charitable Eye Hospital	1
Private Practitioners	
Allopathic (M.B.B.S.)	11
Ayurvedic-cum-Homeopathic	8
Total	28

Number of doctors in rural areas*

PHCs	12
Government state dispensaries	6
Total	18

Doctor-population ratio in urban area is approximately 1 : 1321.

Doctor-population ratio in rural area is approximately 1 : 24,088.

Hospital bed-population ratio 1 : 23,776 approximately.

The pattern of the delivery of health care in this area is mainly limited to the curative care provided to those who come to the hospitals or health centres. There is a general lack of motivation on the part of both health care providers and those needing health care.

Definition of the scheme

The main objective of the project is to provide low cost and effective basic health care to the community, using community members with suitable training. It is planned to utilize VHWs, which is advantageous in the following ways :

— They feel proud that they are useful to the community.
— They are available all the time.
— As they will be paid a minimal honorarium, it costs less to employ them.
— People tend to be motivated better by the people of their own community than by outsiders.

The Project has taken note of the experiences of Jamkhed project and the scheme "*Rahabe-Sehat*" using primary school teachers in rural areas in Jammu & Kashmir. It is also convinced of the validity of the

*Number of indigenous private practitioners is not known.

mission hospital study finding (eight hospitals drawn from six states of India with a sample of 1,032 patients) that 48 per cent patients in the sample did not need hospital care.

Outline of the training programme for the VHWs adopted by Harriet Benson Memorial Hospital, Lalitpur, U.P. is given below under appropriate headings

Aim To bring low-cost effective care to villagers in their own community.

Objectives

1. To train at least one VHW per village to provide primary health care.
2. To reduce under-fives mortality.
3. To improve under-fives nutrition.
4. To reduce birth rate.
5. To reduce maternal morbidity and mortality.
6. To diagnose and bring under treatment all cases of tuberculosis.
7. To diagnose and bring under treatment all cases of leprosy.
8. To reduce the incidence of preventable blindness.
9. To raise the level of health knowledge in the community.

These objectives are incomplete until measurable values are attached to them, e.g. "to reduce under-fives mortality from 25 to 15 per cent over a five-year period". Such values will be added as soon as an initial assessment of the villages has been done.

The strategy adopted

1. Establishment of training programme for VHWs.
2. Weekly MCH and Doctor's clinics to provide back-up for VHWs.
3. Referral system for patients requiring hospital care.

Choice of villages

Choice of villages for operating the project is based on the criteria that (1) the hospital is already holding mobile clinics, (2) that villages be near to the hospital, and (3) willing cooperation of the *Panchayats*.

Where the *Panchayat* expresses interest in the programme, their consent will be obtained on the following operational aspects :

1. The aim of the programme is to provide basic health care at the village level through the training of VHWs;

2. The *Panchayat* will be responsible for providing the salary of the VHW, the rate to be decided by the *Panchayat* in consultation with the hospital;
3. The salary of the VHW will be paid every four weeks in the presence of *Panchayat* and hospital representatives;
4. The first payment will fall due when the VHW successfully completes the initial course of training; and
5. Failure to provide the salary on time will result in the withdrawal of all hospital services from the village.

Village health committee

1. Each village will be encouraged to set-up a village health committee.
2. This committee will discuss the community health programme and other health-related topics with the doctor on a regular basis. They should take an active interest in the programme and offer suggestions for improvement.
3. They will normally be responsible for day-to-day decisions regarding village health, acting on behalf of the *Panchayat* and responsible to them.

If the *Panchayat* agrees to these propositions, a date will be set for the commencement of the VHW training programme, and the time of the weekly clinic will be decided.

The training of VHW will include the following :

Principles of hygiene and disease prevention.

Nutrition and the right use of foods.

Mother and child care including the hygienic conduct of delivery.

Recognition of certain common diseases and when to call the doctor.

Treatment of certain common diseases.

The object of VHW training is to provide health care to the villagers in their own community. Since the most vulnerable groups are children under five and women of child-bearing age, priority will be given to the training of village women as health workers. Male VHW will also be trained but they will not be involved in any maternal services.

Suitable women who are approved by the *Panchayat* will be invited to attend a weekly training class in the village. The preliminary course will be in three sections :

1. Health and hygiene;
2. Maternal and child health, including nutrition; and
3. Diagnosis and treatment of certain common diseases.

Sponsorship

Harriet Benson Memorial Hospital and the Community Health Project is under the administrative control of the Emmanuel Hospital Association of India (EHA) located at New Delhi. Otherwise, it is not sponsored by any other agency.

Source of finance

So far the main source of finance has been from the supporting mission. Funding assistance from an agency abroad for a three to five year period is anticipated. The aim is to make this programme self-supporting, as much as possible, progressively over the coming five years.

Hospital contribution

i) Salaries	(a) Doctor	1
	(b) Community Health Nurse	1
	(c) Midwife-cum-Lab.-Technician	1
	(d) Paramedical workers	1
ii) Miscellaneous	(a) Fuel, oil and the maintenance cost of the diesel ambulance.	
	(b) Medical and surgical supplies, laboratory equipment and teaching aides and materials.	

Community contribution

(a) Making a building available for the regular clinic conducted by the VHW and her supervisor.

(b) Salaries of the VHWs to be arranged through the village *Panchayat* after completion of the training.

(c) Villagers pay for their own medicine.

Free supplies from the government

(a) Vaccines, such as smllapox, diphtheria-pertussis-tetanus (DPT),

tetanus toxoid (TT) and typhoid and paratyphoid A and B (TAB) Vaccines.

(b) Iron-folic acid tablets.

(c) Vitamin A concentrate.

(d) Some teaching materials for family planning.

(These supplies are not regular and depend upon the stock position of the local health office).

Coverage

This scheme has been introduced since March 1976 and is continued in one village where the response is good. It is expected to cover progressively a population of around 30,000 by introducing this programme in 15 to 20 villages over a five year period.

Services and benefits provided

A weekly consultation clinic which is begun with a health talk for half an hour and demonstrations.

The weekly clinic

A weekly clinic will be held in each village served. The purpose of this clinic is to provide a supporting service for the VHW, and patients will be seen on a referral basis i.e. referred by the VHW to the clinic and referred back from the clinic to the VHW.

The clinic will be in two sections :

i) MCH Clinic — for immunisations and weight-recording. (Initially the Community Health Nurse (CHN) will also be doing routine antenatal examinations and giving simple treatment until the VHW is competent to do this).

ii) Doctor's Clinic — for conditions which the VHW is not competent to treat. The doctor will see women and children who are referred to him either directly or via the MCH clinic. Men may be seen on a direct consultation basis or those who will be referred by the male VHW.

iii) A weekly MCH clinic supervised by the CHN and her assistant.

iv) Training of the VHWs. (A class is held once in a week in the village itself).

In the village Bastagunwa, where the training is in progress, two Thakur caste women have been selected to act as VHWs and a *Basod* woman for conducting the deliveries. All the medical supplies and the medicines used in the villages are supplied by the base hospital. Health teaching and demonstrations are given in the village itself. Many times villagers want certain things completely unrelated to their health needs. These may be an approach road, fertilizers, seeds or electrification of the village. Efforts are being made with the villagers to get this particular village electrified and obtain piped drinking water for the village. It is not always possible to get finance from various agencies to do this kind of work. If the villagers themselves collect by contributing and building something, it is very good and raises their morale.

Personnel, facilities and resources

(1) Personnel

Hospital based	(i) Doctor	1
	(ii) Public Health Nurse	1
	(iii) Midwife-cum-laboratory technician	1
	(iv) Paramedical workers	1

These workers at present work in the base hospital in the morning and in the afternoons go to the villages.

Community based	(i) Female VHW	2
	(ii) Male VHW	1
	(iii) Volunteers when needed.	

Apart from these, the Community Health Consultants are constantly supervising, guiding and planning this programme from our EHA head-office located at New Delhi.

(2) Facilities and resources

The hospital supplies all the basic medicines, and patients coming to the base-hospital for special treatment, admission or delivery, are given certain concessions. Sterilisation operations are done free in the base-

hospital. The hospital authorities are negotiating with the Christian Medical Association of India's Family Planning section for arrangements to provide free deliveries in selected cases where sterilisation follows.

The clinic space in the village has been given free by the villagers and they keep it clean and provide *charpai* etc. Until now, there is no separate budget available for community health but the expenses are met through the overall hospital budget. The hospital is about 45 per cent self-supporting and the remainder comes from abroad through the parent mission in the USA. A gift of a Matador diesel ambulance was received from the TEAR Fund, UK., last year.

Mode of payment for personnel

The hospital based staff are paid by the hospital and the VHWs will be paid by the village *Panchayat* as per the mutual arrangement.

Factors affecting quality of service and difficulties faced

As already stated, Bundelkhand areas has rigid caste system and people of high caste maintain definite separation from the low caste villagers.

The female VHWs recommended by the community are Thakur caste women (higher caste). In the beginning when three women were selected, they were asked if they were willing to serve all caste people and their answer was 'Yes'. Thakur VHWs are only willing to give medicines to the low caste people but not touch them nor dress their wounds. Once a Thakur caste VHW refused to hold the baby of a low caste woman while an injection was being given to the baby. The local low caste women known as *Basods* do the work of midwifery in the villages. Although they are allowed to go to the homes of high caste people during the deliveries, they are not allowed to touch the baby or the mother. When the baby is born on the floor and the placenta is out, they ligate the cord and cut. Later on, they clean the room, pick up the placenta and walk out. The delivery is conducted by the senior woman of the house or by some neighbour experienced in the work. It was desired to train somebody who will be allowed to conduct the delivery aseptically as well as cut the cord. But the villagers refuse to be handled by low-caste women. High caste women refuse to touch the placenta and the cord and conduct delivery of low caste women. Therefore, women are being selected from each cummunity who will conduct the deliveries in their own communities and low caste women (who will be trained) will cut the cord and dispose of the placenta. It is very difficult to presuade the villagers to buy medicines. In the past, the villagers had been exploited by the fake medical practitioners, indigenous practitioners and quacks. In many remote villages a contract system

exists in which the practitioner will take a contract for certain amount for a particular illness, half of the amount to be given after the relief or cure is obtained within the period of contract. Alternatively the practitioner will have to give guarantee that he will cure the disease or else return the money. Therefore, these villagers expect treatment on the same basis. Many people think that the health team is coming to them because they are not having enough business in the towns and are therefore trying to earn money here. They want to take advantage of this thinking and say that the treatment be given now and the money collected on the next visit when they are cured. It is very important to win these villagers, by giving them good curative services first, then gradually when their confidence has been won and improved relationship established the scheme is introduced.

However, some villagers who have come to this base-hospital and were cured, support the team and recommend the team to their fellow villagers and also tell them that these people are genuine. This helps to a certain extent, but still it takes time to convince the entire village about the scheme and encourage them to avail of the facilities.

Many people come to test the knowledge of the consultant doctor. They will ask to feel the pulse and tell the disease. If the history is taken then they will keep quite and say "If we tell you about our disease, then what you will discover yourself and you are no good". It takes time to convince them by giving examples to them that everything cannot be discovered by feeling the pulse alone. This is a problem that the VHW will have to face and therefore must be overcome.

During pregnancy, most of the mothers are not allowed to take any type of medicines however sick they are. They will not take any vitamins or haematenics even if the anaemia is severe. They are given very poor or bland diet during pregnancy. Vegetables are withheld because of their "cold" effect. As a result, maternal morbidity and mortality risk increases. After a lot of persuasion, by showing them examples by comparing two pregnant ladies, some women could be persuaded to eat all kinds of food and to take haematenics. Giving them tetanus toxoid injections during pregnancy is also a big problem.

During mass immunisation, the younger age group was given smallpox vaccination, but adults refused to take it. People refused to bring their children for the second and third doses of DPT because of pain and fever that the "under fives" developed after the first prick. Other illnesses of the child were also attributed to the earlier DPT injection.

On the whole, response to the services is better in the interior remote villages. Villages having easy access did not bother to use the project's

services as they preferred to go to the city hospital. The VHW's work is often interrupted due to festivals or the VHW's going away to their parents' place. After a break they tend to forget their earlier training.

Methods of enforcement of control

1. A copy of the rates of the medicines will be given to the village *Panchayat* to check whether VHWs are giving medicines at the prescribed rates or not.
2. If a VHW after training wants to start her/his own private practice, she/he will be replaced by another worker.
3. If the villagers or village council do not cooperate, then all the services will be withdrawn.
4. VHWs' knowledge will be tested every month and if a VHW is found to be not progressing satisfactorily, he or she will be replaced.
5. During the clinic hours and MCH clinics VHWs will be given continuous training and they will be tested regularly about their abilities to diagnose and treat the patients and as to when they should refer the patients to a doctor.

Evaluation of community health programme

The following evaluative measures are planned :

VHWs Training—At the end of one year progress in VHW training will be reviewed :

(a) How many villages have been approached about participating in the community health programme and in how many of these has VHW training got under way ? (This will indicate if approach to village leaders is right or needs modification).

(b) Is the training programme proceeding as rapidly as suggested in the initial plan ? If not, why not ?

—programme too ambitious,

—lack of cooperation/interest of village,

—inadequate staff/resources to carry out programme.

Reduction in under-fives mortality—Two year and five year objectives to be set when baseline data become available. Suggested two year objective—to reduce under-fives mortality by 50 per cent.

Data required are number of under-fives deaths per 1000 live births.

Improvement in under-fives nutrition—To be assessed on arm circumference. Two year and five year objectives to be set when baseline data are available.

Reduction of birth rate—(This is a measure of the success of family planning programme). No change is expected within two years, therefore five year objective only is to be set.

Data required are number of births (live and still) in a year per 1000 of total population.

Reduction in maternal morbidity and mortality—judged by number of deaths of women of child-bearing age.

Data required are number of deaths in women 15-44 years per 1000 births (live and still).

Diagnosis and treatment of tuberculosis—systematic visiting of homes to find all cases of chronic cough. This will be the responsibility of the VHW. Objective would be achieved when all homes have been visited, sputum examination done on all cases of chronic cough, and treatment started on all positive cases.

Diagnosis and treatment of leprosy—active detection is only to be started when good rapport with villagers is established. This is the responsibility of VHW. Objective would be achieved when all suspect cases have had nose-blow smears plus doctor's examination and all confirmed cases have been started on treatment.

Reduction of preventable blindness—assessed by number of new cases of blindness each year.

Increase in health knowledge—assessed by annual knowledge and attitude' questionnaire.

From the above, the following essential data to be obtained in a baseline survey were decided :

1. House number and name of head of household.
2. Number of persons in household.
3. Number of births in past 12 months—(a) live (b) total (live and still).
4. Number of under-fives deaths in past 12 months.
5. Number of deaths in women 15-44 years in past 12 months.
6. Number of cases of blindness.
7. Arm circumference of all under-fives.
8. Knowledge and attitude—questionnaire.

Initially this will be done as one in 10 household survey, but may be extended to cover all homes if time permits.

Summary of objectives

1. To provide low cost and effective basic health care to the community, utilizing the village health worker from the same community and at the same time develop the necessary referral system for deserving cases.
2. To train at least one VHW from one village on the basis of one VHW/1000 population.
3. To make the programme readily acceptable to the community and at the same time effective in terms of providing basic health care.
4. To develop the community resources as much as possible so that the programme may become progressively self-supporting in future, in terms of both personnel and finance.

PADHAR HOSPITAL COMMUNTIY HEALTH PROJECT

V. A. Moss*

Background

Padhar Hospital is situated just outside the small village of Padhar on the main Bhopal to Nagpur road in Betul district of Madhya Pradesh (MP). The Hospital belongs to the Evangelical Lutheran Church in M.P., which has several institutions and projects under its sponsorship in the state. It is the largest of five hospitals run by the church, having 200 beds, excellent modern facilities and a staff of over 150. There are active Surgical, Medical, Paediatric, Obstetric and Gynaecological departments, a Dental department with modern equipment, and a large Tuberculosis (TB) department. Patients come for investigations and treatment from long distances as well as from the immediate neighbourhood of the hospital. There are plans for expanding the scope of the hospital further and buildings are under construction for a large Eye and Cancer Unit and a new nurses' hostel. An Artificial Limb Workshop is being planned. Associated with the hospital is a large, and by now well-known, Tube well Drilling project (The Water Development Project, with headquarters in Betul), a Rehabilitation Centre and a School for the blind, and a dairy farm which has just recently been started, to improve the supply of milk and the stock of buffaloes in the area.

The hospital is situated in a hilly and forest area which is inhabited mainly by Gonds. The Gonds are aboriginal tribal people who live in relatively isolated dwellings in small villages, off the main road, scattered all over the jungle. It is the largest of the aboriginal tribes in India and is concentrated mainly in a broad belt across central India. They have a distinct culture with strong bearings in Hinduism. They have a characteristic dress and a dialect akin to Dravidian languages, more in vogue in south India. The people live on small farms, supporting themselves by farming, forestry and casual labour on building sites and roads. They are very poor and still often use the barter system for trade and salaries are often paid in grains rather than in cash. The literacy rate amongst the Gonds in the area, as shown through an initial survey in 15 villages, is 7.36 per cent and only 25.7 per cent of Gond children go to school. The

*Dr. V. A. Moss, Director, Padhar Hospital Community Health Project, P. O. Padhar, Betul District (Madhya Pradesh).

soil is poor with inadequate irrigation facilities and farming methods are primitive.

Betul town is the Administrative Centre for the district and lies about 20 km to the south of Padhar. It has a 100 bedded Government District Hospital with a busy out-patients department. About 20 km to the north of Padhar lies the town of Shahpur with a Primary Health Centre (PHC) and about the same distance to the east lies Ghoradongri with another PHC. There are three subcentres, staffed by one Auxiliary Nurse Midwife (ANM) each, within 10 km radius of Padhar.

It has long been felt by the management of the hospital that more preventive work should be done in the surrounding villages and plans were made some years ago to start traditional Mobile Village Clinics. With the development of new ideas about the delivery of comprehensive health care, these plans have also changed and the ground-work for the present project was started in 1975 with some survey work, training of Health Educators and the establishment of Maternity and Child Health Services in the hospital out-patient department.

After much initial discussion with hospital staff, local government officials, the Director of Health Services (DHS) for M.P., and local village leaders as well as with Community Health Consultants in Delhi and London and Directors of other Community Health Projects, the present plans were formulated. The proposed budget was worked out in detail and presented to a donor agency. It is felt by those involved in the project that the plans must be flexible, allow for growth and new developments, be open to new ideas and be replicable (i.e. the plans must be applicable and adaptable to other areas and workers).

Initial surveys show that the birth rate is about 57 per 1000 population, the infant mortality rate is about 150 (per 1000 live births), the incidence of malnutrition in the under-fives is 42 per cent (second and third degree malnutrition screened by the Bangle test) and the incidence of scabies is 33 per cent. The incidence of vitamin A deficiency is 6 per cent (measured by Bitot's spot and night blindness), Anaemia 5 per cent (measured by pale nails and conjunctivae, and obviously not an accurate figure as yet). The overall incidence of blindness is 4 per cent. T. B. and leprosy are not such big problems as was thought initially, the incidence being 1.3 per cent and 0.07 per cent respectively. The incidence of T. B. is being ascertained through sputum test.

Definition of the scheme

This is a project aimed to attempt to establish in a target area of 10 km radius of Padhar Hospital, a comprehensive health care service

which has as its basis the understanding that "health" involves physical, mental, spiritual, social and economic well-being and is closely linked with overall development.

The general aims of the project are to change the attitudes of the community towards its own health by increasing awareness of its medical and social needs, and providing the community with the means of improving its own health through an increased understanding and use of its own resources and development of its own potentials.

The means and strategies for achieving the aims are :

1. Survey and analysis of data collected from the target area.
2. Widespread health education.
3. Selection and continuous training of village health workers.
4. Initial and in-service training of traditional birth attendants.
5. Provision of immunisation, family planning facilities and minor medical care.
6. Non-formal education in needy areas such as literacy and agricultural development, health and hygiene.

It is expected that as a result of these efforts the following targets can be achieved at the end of two years :

1. Reduction of Infant mortality rate in the target area by 50 per cent from the present 150 to 75 (per 1000 live births).
2. Increased acceptance of family planning methods and thereby a reduction in the birth rate by 10 per cent from the present 57 (per 1000 population).
3. Reduction in the incidence of vitamin A deficiency by 50 per cent, thereby reducing the incidence of preventable blindness.
4. Reduction in the incidence of malnutrition in the under-five by 50 per cent from the present 42 to 21 per cent.
5. Reduction in the incidence of scabies from the present 33 per cent by half.
6. Increased acceptance of immunisation of under-five and pregnant women to cover 50 per cent.
7. Increasing the literacy rate and improving farming methods.

Sponsorship

The Evangelical Lutheran Church of M.P. is sponsoring this project through Padhar Hospital. This is thought of rather as a pilot project where ideas and methods can be experimented, with the idea of later

starting similar projects in the other areas where medical work is being done by this church. The ground work for starting other projects has already begun.

Source of funds

The Christoffel Blinden Mission (CBM) of Germany is providing the basic fund for a three year project. The CBM is particularly concerned with the work of preventing blindness and with the rehabilitation of those already blind, and are also supporting the Rehabilitation Centre and School for the blind at Padhar.

Coverage

The target area was originally tentatively fixed as a result of discussions with personnel of existing services in the area, both government and voluntary. The area may be adjusted slightly to fit in with the block system and the PHC responsible for most of the villages in the area at Ghoradongri. It was taken as a 10 km circle around Padhar for several reasons. There are very few existing medical services in just this area. Apart from this, Padhar is at a reasonable distance to travel by Landrover even over difficult terrain. There are about 82 villages in the target area and the population is estimated to be about 36,000 (recent accurate figures are not available yet).

Services and benefits provided

1. Regular house-to-house visiting by the Community Health Team with relevant health education i e. if there is scabies in the family, then the Health Educators talk about scabies, not about malnutrition and of course, vice versa.
2. Care of minor illnesses in the village. The team members carry small supplies of gentian violet, sulphur ointment, kaolin mixture aspirin, chloroquine, ferrous sulphate and multivitamins which are sold to the village people when necessary, but with emphasis put on general health measures. In the case of any illness which is long standing or severe, the patient is advised to go to hospital for proper investigation and treatment.
3. Massive doses of vitamin A given immediately, free of charge, in cases found to be deficient.
4. Maternity and child health services in the hospital out-patient department, with immunisation facilities, and health education in the OPD and wards.
5. It is hoped, in the near future, to provide soil testing facilities in the village and also the sale of fertilisers and good seeds at cheap rates.

6. School health services with medical, dental and eye check-ups.
7. Improved standard of health care in the villages through trained, village Health Workers (VHWs) and traditional birth attendants.

Personnel, facilities and resources

Personnel : The project is reckoned to be part of the health services of the hospital, and the personnel are therefore hospital employees. The Director of the project is Dr. V. A. Moss who works in consultation with the Hospital Committee and the Synodical Council of the Church.

The team further consists of :

A Senior Nurse, she is at present undergoing postgraduate training at the All India Institute of Public Health and Hygiene in Calcutta.

A Laboratory Technician-cum-Driver who acts as male spokesman in the village. He is basically a laboratory technician who has been taught to drive, and is also having further training in agriculture, soil testing and community development.

Health Educator, is a teacher by training who has been taught the use of flash-cards and some basic concepts of health and hygiene. They have also been trained in conducting house-to-house surveys.

Auxiliary Nurse Midwife (ANM) helps to run the maternity and child health clinics in out-patients and also do health education in the wards, the villages, and do survey work with the rest of the Team.

There are persons in training for other projects also working to gain experience for a month or two, before going on elsewhere. Members of the rest of the other disciplines for example the Dental Technician, sometimes gives lecture demonstrations on first aid, one of the senior doctors may give a lecture on a subject in his own speciality. Interested members may join with the team to help in a special publicity drive for an eye or a family planning camp.

Facilities and Resources : A good hospital exists where it is possible to do a wide range of investigations, the supply of medicines can be replenished, children can be sent with confidence for immunisation and adults likewise for family planning procedures, emergencies can be dealt with quickly and maintenance and repairs of vehicles can be done. There is also access to a printing press in Betul, 20 km away for printing at a reasonable price. There is also a diesel Landrover which is available most of the time for the Community Health Team.

Mode of payment for the personnel

All members of the Community Health Team are on the hospital pay-roll and are paid in the normal way through the Administrative Office.

VHWs will, it is hoped, be paid by their own village, at the rate of 50 paise per household per month, to be collected monthly by the *Panchayat* or a member of the village appointed for the job.

Traditional birth attendants will continue to be paid in the traditional way by the family she serves.

Factors affecting the quality of services and difficulties faced

Problems inherent in the team or in the nature of the work are as follows :

1. None of the leaders in the team is a Gond and most do not as yet speak Gondi. The last is being rectified and the team is having weekly Gondi lessons. But the fact that there are no Gond workers inevitably means that team members do not fully understand the Gond point of view. There is a Gond girl on the team who is being trained and is making a valuable contribution to the understanding of the Gonds by the workers.
2. The team only has one male member, the Laboratory Technician-cum-Driver, who has to undertake a large number of jobs on a variety of subjects which requires not only knowledge of different subjects but also communication skills, and leadership qualities. The team needs another male member.
3. In addition to the inter personnel problems of working in a team, the frustrations of community health work, with low remunerations and slow results have to be recognised and reckoned with when implementing a community health project.
4. Irregular hours.
5. It is hard to move about in the inclement weather-either hot and dusty or wet and muddy.

Factors inherent in the community

1. The suspicion of the Gonds about outsiders, sometimes makes it very difficult to make initial meaningful contacts. They have been exploited for generations and have learnt by bitter experience not to trust other people outside their own group. Their usual feeling is "These people must be trying to get

something out of us, or to trick us into some deal which will mean loss to us"

2. *The attitude of the Gonds to family planning :* The Gonds look upon family planning with deep suspicion and distrust. This might be due to negative impressions created by certain instances of forcible sterilisations, lack of follow-up, complications etc. One has to work slowly and patiently to gain confidence of Gonds.
3. *The resistance of the Gonds to change :* The Gonds on the whole do tend to feel that "what was good enough for my father is good enough for me". Therefore the changes that come will only come from within the community and individuals, and it will only come slowly.
4. The Gonds are *animists*, worshipping spirits in trees, rocks, fields, water and so on. Their acceptance of treatment suggested in health centres depends upon approval of priests and healers. Thus a child with malnutrition, measles and diarrhoea may be forbidden to consume any milk, eggs or green vegetables for one month—and consequently dies of malnutrition and dehydration. In addition, they have traditional beliefs about family planning. Superstitious ideas like a child with diarrhoea should not be given anything to drink, and one cannot feed a child before he has teeth.

Methods of enforcement of control

This is difficult and depends on the motivation both of the team members and of the village *Panchayat*, VHWs, village *dais* and unofficial leaders. It is felt that control should be a result of true understanding and appreciation of the factors involved. However, a VHW or *dai* would be checked once a week or so by a team doctor or senior nurse. If the villagers are paying, presumably they will also expect value for money.

Evaluation

This is tackled through the daily and weekly team meetings and also through re-surveys. The process of surveying again those villages in which the teams have worked for a year is in progress, to see particularly what change, if any, has occurred in the malnutrition rate, the vitamin A deficiency and scabies.

TRIAL FOR VILLAGE HEALTH WORKERS IN A REMOTE AREA OF HIMACHAL PRADESH

S. A. KAUL*

Background

The villages situated about 10-15 km. north east of Manali, Himachal Pradesh, were found quite remote and very hard to approach, particularly in the monsoon and in winter when they get completely snow bound. Each village has an average of 25-30 houses, occupied by joint families, bringing the total village population to approximately 120-220. Five villages were chosen for a trial of the Village Health Workers (VHWs) Scheme, covering a total population of 1000.

The main occupation of the industrious villagers is agriculture. The community may be described as reasonably healthy living in the extreme weather conditions and tough life of the mountains.

The main health related problems found in the community are :

1. *Malnutrition :* Generally the problem of malnutrition has three basic ingredients—want of food, want of care and want of knowledge. In the experimental villages, although enough food is available, due to ignorance and wrong notions among mothers that giving more food to small children will cause diseases like diarrhoea and pot belly etc , proper diet is denied to children. There was a great need to get the community involved in the management of malnutrition and thus getting the solution closer to the home.

2. *Infectious diseases :* Though measles and whooping cough are quite common, tuberculosis is widely prevalent and infection spreads rapidly due to close knit family living and total ignorance of the preventive efficacy of immunization. Due to lack of appreciation of the severity of the disease, drop out and drug defaulters are too many, who are instrumental in spreading the infection further.

3. *Poor hygiene and sanitary conditions :* These cause all kinds of gastroenteritis. There is a high incidence of round-worm infestation too.

*Dr. S. A. Kaul, B.Sc., M.B.B.S., Project Director, Lady Willingdon Hospital, Manali (Himachal Pradesh).

4. *Family planning :* This is a crucial need to improve the general health of the community by bringing down infant mortality rate and general death rate in the total population.

5. *Child births :* Only one to two per cent of the women came to the hospital for child birth. This is understandable because it is very difficult for them to get to the hospital during most part of the year, due to bad weather. It is therefore necessary to encourage them to have home deliveries by teaching them the simple methods and the hygienic way of conducting delivery.

Definition of scheme

The overall purpose of the scheme is to give basic health care to these backward and remote villages as it is not practical for the hospital in Manali to cater for all their medical needs. It appears practicable to train them as VHWs to cater to the basic health care needs of the community. It involves teaching them about malnutrition in under-fives and their remedies, antenatal and postnatal care, care of newborns, immunization, family planning, management of simple illnesses and common infectious diseases.

Sponsorship

This scheme was started by Lady Willingdon Hospital Manali in October, 1974 under the guidance of Dr. B. M. Laugesen of V.H.A.I., New Delhi as a part of the public health programme of the hospital. Due to limited staff, only one day a week could be spared for this scheme.

Source of funds

As a pilot scheme, specific funds are available for the scheme. The modest expenses on the scheme were met through the main hospital funds and some voluntary donations.

Origin of scheme

Initial efforts to give health care in the villages by the hospital staff proved ineffective because most of the villagers were away in fields when the health team visited the village. In a weekly visit schedule acute and serious cases got no help. What the community needed was a continuous supervision and medical care provided by one of their own villagers suitably trained to render the basic health care. Although the VHW scheme appeared ideal to try, the initial reaction of village leaders was disappointing. As a result of almost nine months' perseverance, five young women, with an average age of 19-20 years, came forward willingly to have their training. Two of them were married and had no children and the rest of the three were unmarried. Of the five, one had done

matriculation (now has left for employment elsewhere). Two could read and write Hindi and the remaining two are illiterates. Each one of them was willing to undergo training without monetary gain. However, it was suggested that the villagers should contribute towards the financial support of these workers. This has not materialised yet. Of the remaining four VHWs, only one is irregular in her attendance, the other three have 85-95 per cent attendance.

The scheme

The VHWs were trained at the base hospital every Thursday morning through class room lessons and practical training by the doctor and the nursing staff. Transportation charges were paid to encourage their attendance during training. On alternate Wednesdays the doctor visited their villages and involved them directly in his work within the village. Their regular attendance on Thursdays and their enthusiasm to learn were encouraging. They participated in various clinics at the hospital like tuberculosis clinic, antenatal, postnatal and well baby clinics. Each VHW was given a note book to maintain a record of their T.B. patients and their treatment, their antenatal cases, along with the record of the total village population. During the doctor's visit, they presented the cases from their respective villages for instructions regarding treatment.

Training

1. *Child Nutrition :* The VHWs were getting to be aware of the problems of malnutrition in under-fives and their remedies and soon they were knowledgeable enough to tell the mothers about the right and adequate, but not too expensive, diets for their children.

2. *Family Planning :* They learnt the basic problems of large families. After fully understanding the family planning methods themselves, they started advising the villagers about them. Being women themselves it was easier for them to approach village women and talk to them about loop, pill and tubectomy.

3. *Immunization :* The advantage of immunizations over treatment were explained to them. The suggested immunizations were BCG, smallpox vaccination and DPT (though the occurrence of tetanus is very low). The VHWs became fully aware of the need for immunizations and they would motivate people and bring them over to the base hospital or to the doctor on his Wednesday visits for immunizations.

4. *Gastroenteritis :* Contrary to the usual belief of the villagers that the best way to cure diarrhoea and vomiting is to stop the intake of fluids by the patient, the VHWs were taught a simple treatment of basic body

electrolyte imbalance by administering a simple salt, water and sugar solution.

5. *Tuberculosis (TB) :* They learnt to identify T.B. patients and would either send or bring the patient to the base hospital for confirmation of diagnosis and initiating the therapy.

6. *Practical experience in obstetrics :* During the training period, for about three months, the VHWs were attending the antenatal clinics at the base hospital, once a week, where they learnt about both normal and abnormal deliveries. They were trained to assess the height of the uterus, to check the foetal heart and position of the foetus. They also gained knowledge regarding diet during pregnancy and in preparing the mothers for the delivery. They also had short but intensive training at the hospital. They spent 10 days at the hospital. During this time they watched a number of normal deliveries and conducted a few themselves under-supervision. They also received a series of lectures during this time on normal delivery, post partum care and breast feeding. They were shown a few abnormal cases which needed to be referred to the hospital. At the end of this training they were confident enough to conduct normal deliveries and so they were equipped with a delivery kit which would enable them to conduct home deliveries successfully.

7. *Care of simple illnesses :* They were also taught to manage simple illnesses like fevers, febrile convulsions in children, common eye infections, measles, chickenpox, peptic ulcer, vaginitis and anaemias. They were familiar with the care of simple wounds and mild burns and abscesses.

They learnt to manage dog bites and to refer the serious cases to the hospital.

They learnt just enough to advise the villagers regarding the available treatment for congenital anomalies like club feet, cleft lip and palate, imperforate vagina and anus, meningeal and unbilical hernias.

8. *Medicines :* The VHWs were taught the administration of simple medicines like aspirin (adults and children), anti-diarrhoea agents, piperazine citrate for round worms, iron and folic acid for anaemia and/or pregnant mothers, vaginal suppositories, acriflavin and antiseptic powders as dressing agents, use of gentian violet on boils and in monilial infection.

The VHWs buy these medicines from the base hospital and sell them to the patients at a nominal profit.

Problems involved

1. It was difficult to get the cooperation of the villagers who would not visualise the future of the scheme. The village elders objected to their women folk going out of their villages for their training.

2. Another problem was the VHWs inferiority feeling regarding their own poor education and lack of confidence in their ability to learn and retain what they learnt. Attempts were made to overcome these feelings of inadequacy by asking them to give a summary of their previous lessons, thus enabling them to realise that they had in fact retained the necessary knowledge, thus giving them confidence and encouragement.

3. *Financial help to the VHWs :* Each family in the village paid Rs. 1/- per month towards the payment to the VHW. Unfortunately it did not work out very well and even the village *panchayat* did not entertain the idea.

4. *Organisational problems :* The Lady Willingdon Hospital is a small 22 bedded general hospital with very limited staff. It offers both inpatient care and out-patient clinics of various types. Work here being not very light and the doctor-in-charge of the scheme given other responsibilities, it was not possible to spare more than one day per week for this VHW scheme and this was rather inadequate to carry on the scheme successfully. Had it not been for this inadequacy of time, perhaps the scheme would have been much more successful.

The limited staff in the hospital was another handicap. It was not possible for the doctor to get anyone else from the hospital to help him with the scheme.

Since this scheme did not have any separate funds, even the smallest expense would cause disturbances in the main budget of the hospital.

Evaluation

In spite of all these difficulties this scheme is working out very well in the villages. Out of the five VHWs who started their training, three are still working, though one is on maternity leave at the moment. Just recently, another enthusiastic young woman has joined the project and is picking up quite well.

The villagers go to the VHWs with their complaints. If it is simple ailment the VHW sees to their needs. If it is a major problem she advises them accordingly and refers them to the doctor.

The TB patients seem to be more regular with their treatment under the supervision of the VHW.

By the very fact that the VHWs get called for deliveries at home, it is obvious that the villagers are developing confidence in them. As the time goes by it is expected that these VHWs would be bridging the gap between the hospital and the villages, unaffected by snow or torrential rains.

Future plans

There are 64 villages in this valley, 16 km. either way from the hospital, with an approximate total population of 8000-10000. It is in the plan to introduce the VHW scheme in these villages.

In short it is essential to have the following points to make such a project successful :

1. Independent project with adequate funds.
2. Adequately equipped base hospital which backs-up the project at hospital level.
3. Devoted personnel to staff the project.
4. Good public relations with the community.
5. Tolerant attitude towards the culture of the people served.
6. To get the community involved in the scheme directly.
7. To make available simple basic medicines to the villages and to avoid expensive and complex techniques.
8. Definite pay for the VHWs. Part of the pay atleast coming from the community served.
9. Project assessment should not be statistically oriented. An insignificant 1 per cent conversion rate could be of the utmost significance.
10. The target population who should be best served and cared for should be the children—the future parents.

Comprehensive Rural Health Projects

COMPREHENSIVE RURAL HEALTH PROJECT, JAMKHED

R. S. AROLE*

Background

The present system of health care delivery caters to the fortunate few in metropolitan areas and to a few who happen to live next to the primary health centre (PHC) or physician. A large number lives in rural areas where little or no primary medical care is available. The present system of health care delivery is mainly dependent on qualified medical personnel whose training does not motivate them to serve in rural areas. The physicians and health workers are not trained to understand the various constraints such as poverty, communication barriers and cultural beliefs that prevent the common man in rural India from taking advantage of the expensive, highly specialized and technical health care that is available to a small proportion of the population.

The problem is therefore one of evolving a system of medical care which will substantially overcome the existing health problems and would reach the target populations despite constraints of poverty, geographical isolation, deep rooted cultural beliefs and misconceptions of disease which prevent the common man from seeking timely help even if such help is made available in rural areas. A sense of helplessness and dependency prevails in the villages, because the people had no occasion to solve their own health problems. The patronizing attitude of the medical profession further strengthens the attitude of helplessness.

The Comprehensive Rural Health Project is seeking to find alternative methods of health care delivery taking into consideration these economic, social and cultural restraints that are found in the rural area and it is using local personnel to develop the health care service.

Sponsorship

A locally registered Indian Society, based in Bombay, sponsors the project. It has a governing board consisting of eminent teachers of community health, physicians and administrators engaged in national and international health programmes. They assist the Director in administration and policy making. An advisory committee consisting of a local

*Dr. R. S. Arole, B. Sc. (Hon.) M. B. B. S., M. P. H. (USA), Director, Comprehensive Rural Health Project, Jamkhed, District Ahmednagar (Maharashtra).

Member of Legislative Assembly, Members of local *Panchayat Samiti*, President of *Zilla parishad* and other local leaders in the area. This committee advises the Director on the problems that exist and discuss ways and means of solving them. They also help in forming a liaison between the project and the government.

Source of funds

Initial finances for capital expenditure for establishing a 30 bedded clinic, including X-ray and other diagnostic facilities, staff housing and vehicles were provided by funds received through the parent body namely the Marathi Mission, Bombay. After initial expenditure the project raises money from the local persons on a-fee-for-service basis. Curative care is a felt need of the people and most people are willing to pay for such services. Therefore in the absence of funding from other agencies such as government, the income derived from curative services is used to provide a comprehensive community-oriented preventive health care programme to the villages in the project area.

The cost of the health care programme is Rs. 4,00,000 per year of which Rs. 3,00,000 are received as patient fees. The remaining funds are from government for family planning work, and other agencies for leprosy, tuberculosis and blindness. The capital investment has been Rs. 15/- per capita and recurring expeniture Rs. 5/- per capita.

Coverage

A specific population of 40,000 people is chosen for intensive care. The entire population receives primary care at local level and emergency, surgical, medical and obstetrical care at the centre level. Care for special target groups include preschool children, mothers in child bearing age, eligible couples for family planning, chronically ill patients with leprosy and tuberculosis, the blind and the potentially blind. These groups total more than 50 per cent of the population.

This population is scattered in 30 villages. An individual village is considered as an unit for health services. Each village has a village health worker VHW who is a resident of the village. Jamkhed has a well-equipped health centre. Most villages are within 16 km of Jamkhed. A mobile health team supervises the VHW on a weekly basis. Thus, 40,000 population gets intensive care. Additional 40,000 people avail themselves of the diagnostic and curative services available at the centre.

Personnel, facilities and resources

A community oriented programme needs community involvement both at the decision making level and in its implementation. The health

programme has been started in the villages where the local community has first felt such a need. The community provides a local building for a clinic. The villagers from a volunteer group called Young Farmers Clubs. They help to identify the village health problems and take part in organising mass health activities such as immunisation programmes and family planning campaigns. They help run community kitchens in their villages and take part in the preparation and distribution of food. They also help cultivate local land to provide nutritious food for the village children.

In certain villages they maintain approach roads. Each village community selects a village woman to work as VHW. She is responsible for the health activities in her village. Her role is to do preventive and health promotional work and give simple primary health care in a limited way.

The VHW is given intensive training in health education and care of preschool children and maternal care. Being part of the community, she understands the social, economic and cultural problems and is able to communicate with them in a manner which is acceptable to them. She is well accepted by the village and her services are freely available to all groups in the village at all times. Since her incentive is not money job satisfaction, she is highly motivated to improve the health of her village.

In addition to maternal and child health (MCH) services and primary health care the VHW's work includes collecting vital statistics of the village, assisting in surveys, and follow-up of leprosy and tuberculosis (TB) patients. Her most important function is to bring about change in attitude, remove taboos and to prepare minds of people to accept remedies which are easily and cheaply available.

Each village is visited by a mobile health team consisting of a fully trained nurse midwife, paramedical worker and social worker. This team helps the VHW and Farmers' Club in their activities and renders professional services.

With the help of standing orders the nurses are able to solve approximately 80 per cent of the health problems. The paramedical worker helps the nurse in following up chronically ill patients and helps in their rehabilitation.

The third facility available for the villager is the main centre at Jamkhed. An outpatient service, X-ray and other diagnostic facilities, emergency operating room, blood bank and other facilities are available. There is also an inpatient facility of 30 beds. There are two trained physicians with experience in general surgery, medicine and obstetrics and community medicine available at the health centre.

An onward referral system to Ahmednagar hospitals has been established for more complicated cases.

The services and benefits provided are as follows :

1. Total villages : 30

Services for preschool children

1. Nutrition programme for all deserving preschool children in the area. This consists of one meal daily.
2. Immunisation of all preschool children with BCG, triple antigen and polio vaccine—80 per cent coverage.
3. Providing simple minor illness care at village level.

Maternal services

1. Antenatal and postnatal care of every pregnant mother in the village by VHW. Four visits by nurse to give tetanus toxoid and to decide on hospital or domiciliary delivery.
2. Domiciliary delivery services by VHW—trained to conduct deliveries and recognise complications.

Family planning services

Cafeteria approach with emphasis on spacing. Over 600 women are on oral contraceptives. Tubectomy and vasectomy are carried out at the main centre.

Control of chronic illness

House-to-house survey carried out to identify leprosy and TB cases and regular follow-up and rehabilitation of such patients.

Prevention of blindness

1. Early treatment of eye infections by VHW.
2. Prevention of vitamin A deficiency by six monthly distribution of vitamin A to all preschool children.
3. Cataract surgery.

General public health measures

1. Provision of safe drinking water through tube wells.
2. Mass health education through mobile puppet shows, and health talks and other audio-visual aides.
3. General agricultural development facilities to increase food production and thereby improve nutrition through Young Farmers Club Services. These include better seed, fertilizers and development of water resources for irrigation.

Curative and diagnostic facilities provided

1. At village level by VHW (limited)
2. Nurse
3. At health centre
   - Laboratory
   - Electrocardiogram (ECG)
   - X-ray
   - Operating room

All professional staff are paid wages which are mostly comparable with government scales of pay.

At the village level where community involvement is greatest, the VHW is a part-time volunteer who is given an honorarium of Rs. 30/- per month.

Factors affecting quality of services, and difficulties faced

The use of lesser trained personnel and delegation of responsibilities of physician to nurses and VHWs affect the quality of curative service provided. But this limitation in the curative field is far outweighed by the effectiveness of these workers in the field of prevention of illness and attitude change. Over eight per cent of common illnesses can be dealt with by the VHW and nurse. There is the danger of these workers becoming overconfident and becoming pill pushers rather than agents of health promotion in a community. In order to prevent this, it is essential for the physician to have a close liaison with the community and the Young Farmers' Clubs. Frequent supervisory visits, village meetings and free communication act as safeguards to the work of both the VHW and the mobile team.

Evaluation

1. On-going evaluation based on activities—Are target populations being reached ?
2. Periodic surveys in the project villages and control villages to compare status of target populations.
3. Ultimate control of health problem related to target populations (see attached appendices I and II).

Appendix I

	Project area		Non-project area
	1971 Jan.	1976 Jan.	1976 Jan.
Population surveved	1490	1491	1405
Eligible couples	269	252	244
Percentage practising family planning	2.5 per cent	50.5 per cent	10 per cent
Birth rate : Live births per 1000 population	40/1000	23/1000	37/1000
Immunization status of underfive children	less than 1 per cent	84 per cent of children	15 per cent of children
Infant mortality	97/1000 lives births	39/1000 live births	90/1000 live births
Antenatal care	less than 0.5 per cent women	78 per cent of pregnant women	2 per cent of pregnant women

Appendix II

Comprehensive rural health project Jamkhed

Comparative statistics	1971	1975
Family welfare planning		
1. *Antenatal/postnatal care*		
Newly registered	364	1476
Revisits	654	10266
2. *Deliveries*		
Hospital	106	90
Domiciliary	2	319
3. *Family planning*		
Tubectomies	127	564
Vasectomies	15	17
Oral contraceptives	102	658
The underfive clinics		
1. Immunisations	7075	3604
2. Supplementary feeding programme	1150	5400
3. Minor illness care visits :		
By village health worker		11688
Mobile team		2829
Main centre		12712
Control of chronic illness		
Tuberculosis		
Newly detected in area		75
Newly detected in non-project area		299
Total patients followed-up		1259
Leprosy		
Patients newly detected in area		51
Patients newly detected in non-project area		82
Total patients followed-up		1139
Rehabilitation of patients with chronic illness		150
Prevention of blindness		
Vitamin A deficiency :		
Prevention in children		5400
Prevention in mothers		1200
Cataract extraction since 1974		403
Treatment of simple eye infections—conjuctivitis etc.		8076
Curative and diagnostic services		
Mobile clinics (adults general)		5628
By village health workers		3240
		8868
Out patient clinics attendance at centre		18295
X-rays and screening		3803
Laboratory tests		9019
Inpatients		1707

COMM 332
COMMUNITY HEALTH CELL

ALTERNATIVES TO HEALTH CARE SYSTEM

N. H. ANTIA*

Background

The modern system of medicine in India was imported from Britain to cater to the British troops and civilian expatriates, and to a small favoured elite of the native population. During the three decades after Independence the medical profession, steeped in western teaching and practice, abrogated to themselves the total responsibility for the planning and operation of a health service, which was now meant to cater for the entire population of a predominantly rural country whose per capita income was one of the lowest in the world. Unable to comprehend this entirely new problem and not being trained in the skills of planning, organisation and management, their reaction was to expand the existing medical services, with slight modification.

The result today is a vastly expanded service based on an increasingly sophisticated and personalised type of curative medicine suitable only for western affluent nations. Is it any wonder that the aspirations of most of young doctors of the country is to practise abroad ? While the western countries are having second thoughts about the cost effectiveness of such health services, the medical profession in India is still unaware of the realities of the country's health problems and fails to question the basic premise as to whether this system is at all suited to the needs of the people.

In fact a vastly expanded, powerful and entrenched medical profession is trying to thrust the benefits of 'modern' medicine down the throats of the people, the majority of whom are below or just above the 'poverty line'. This has been achieved through what Dr. Mahler, the Director-General of the World Health Organization (WHO), calls the "mystification" of modern medicine i.e. by creating the myth that only doctors know how to deliver health care. Far from realizing their limitations the profession has disuaded non-medical persons from taking any active interest in the field of health care.

The differences in disease problems as well as in the social, economic and cultural differences between India and the West, and even between the

*Dr. N. H. Antia, Trustee, The Foundation for Research in Community Health, 48A. Abdul Gaffar Khan Road, Worli, Bombay (Maharashtra).

urban and rural areas of this country have received scant attention. This is because the profession which considers itself part of the elite is culturally aloof from the vast majority of the people it is meant to serve. This is a major factor affecting almost all fields of development in this country. We have failed to appreciate the overriding importance of the cultural factors in the delivery of services and no amount of technological excellence, even if it is appropriate, can bridge this 'cultural gap'.

The decision makers in the profession being culturally western oriented naturally look to the West for solutions, not being aware of the problems, weaknesses and strengths of this country.

The training given in the medical colleges demonstrates how much further drift is taking place from the realities of the Indian situation. Preventive medicine is generally the most neglected department and the teaching theoretical and often impracticable. The teaching of the bearing of social, economic and cultural problems on health is non-existent as also the preparation for working as the leader of a Primary Health Centre (PHC) viz. leadership, organisation, supervision and management of a large team of paramedical workers of varied disciplines, health education, understanding the *taluka* and district administration, and the Panchayat system.

It is therefore not surprising to find that the PHC doctors ignore all other duties and settle down to the curative role most familiar to them. In fact, the farthest part of the health service periphery at which a present day doctor can be effectively placed, is the district hospital, where he can perform the tasks for which he has been trained. Of course it is appreciated that there are vast numbers of general practitioners who are working in the villages but they are entirely curative oriented and are of no help in developing a 'health' service. Furthermore the exposure of the young medical students to the specialities and superspecialities like intensive cardiac care and renal dialysis and transplants, naturally inculcates in their minds values which are diametrically opposed to those required for their working in a non-sophisticated environment.

Having trained them for five years with little or no orientation to the need of the country it is now proposed to "reorient" them to "serve the people" by rural internship, mobile hospitals, medical camps, special courses in community medicine, general practice, short courses of three years in existing medical colleges or in 'rural' medical colleges with all the sophistication of the urban counterparts.

Let it be quite clear that the vast majority of the medical profession has neither by training or interest the ability or the desire to deliver the

type of health service that the vast majority of the people of this country evidently need. No amount of semantics can change the stark reality of facts as they exist today. What the country needs is a simple, cheap but effective community health service with emphasis on prevention and health education and not a sophisticated, personalised and expensive "illness service" which is being provided. The only major benefits of the health services like malaria and smallpox control have been the result of preventive measures.

Coupled with the 'cultural and technological gap' is the almost total lack of involvement of the community itself in the programmes aimed at their health. As a result of this lack of participation their is almost no feedback from the field, and peripheral workers are at liberty to work or not, since organisational supervision is at best sporadic. Correlated to this is the almost total lack of research into what are the actual health needs of the people. Thus far, the medical profession and the policy-makers whom they guide, have developed health programmes either intuitively or on an *adhoc* basis ; no significant attempt has been made to evaluate the actual needs of the people by assessing the present utilisation of various services, the relative incidence of diseases, and efficiency of personnel. It is ironic, therefore, that foreign study teams have compiled more comprehensive data on the health needs of the country than anything indigenously produced.

It is time to seriously look into the possibilities of micro-level planning, for health and other welfare services. The present highly centralised planning cannot take into consideration the realities of social barriers, hierarchies, and political forces, which can often render the most efficient plan unworkable at the village level. It is therefore essential to evolve a system of micro-level planning within a broad-based national plan ; the objectives may be similar, but the methodology must by necessity be different in different parts of the country.

It will be interesting to note that all the above problems of health care were clearly appreciated in the Bhore Committee Report of 1946 and the solutions suggested by them could even today not be much improved on. It is a classical document on the delivery of health care to a large rural country with limited resources and long preceded the Chinese 'bare foot doctor' concept. Unfortunately, the medical profession of this country chose to ignore and side track this committee's recommendations as it did not suit their personal requirements and aspirations. The penalty which the country has paid defies comprehension. The country can afford to continue to neglect the basic concepts of this Report only at its peril.

Much of what the author or many others have and will have to say and do in the developing of an appropriate health service for this country

will be found in the Bhore Committee Report. Let a tribute be paid to the farsightedness and clarity of vision of the persons who drafted it.

Having been for almost two decades a teacher and a specialist in one of the largest and oldest medical colleges of this country, the author is convinced that the chief beneficiaries of the present system of medicine is the medical profession and not the public, despite the fact that the latter contribute Rs. 80,000 towards the education of each doctor. The products of these institutions are not only unsuited to deliver health care to rural areas but also to the majority of the urban population. The wide-spread habit of over-treatment and overmedication is not only unscientific but also unethical. Specialisation has created hopes and demands which cannot be fulfilled. The so-called 'free' hospitals, including the teaching hospitals, provide a service which would not be acceptable by any standards of western medicine, which are being tried to be limited.

Having painted this bleak, but it is hoped, a realistic picture of the present health service, is there any alternative within the reach ?

Fortunately, the problem of health is not as complicated as it is generally made out to be. Health as Gandhiji stated is an attitude of the mind which helps to develop habits of cleanliness, correct food habits etc. Water supply, sanitation, medicines and even food can be delivered to the individual or community, but its correct utilization depends on the attitude of the recipient. Unless health awareness is created among the people no health programme can succeed. Health education is the basis of health services. The people must therefore, be participants as well as initiators of health programmes and not passive recipients as at present.

Cost-effectiveness-wise preventive services are much superior to curative services. The existing preventive services could be much more effective if the public were aware of their importance in the maintenance of their own health. The people would then both demand and supervise a service which they at present feel is a ritual to be carried out by special health personnel.

Even, most illnesses are fortunately simple, often self-curing and can be cheaply and effectively treated in their early stages. Diarrhoea and upper respiratory tract infection account for about 60 per cent of all ailments and can be treated by intelligent self-medication or by simple drugs provided to a village woman trained for a few days. Oral hydration has been proved to be highly effective in diarrhoea. If these and many other diseases are treated early with simple but effective drugs like sulphaguanidine or sulphadiazine only, a few illnesses would need the attention of a highly qualified person.

The Rural Health Research Project

Sponsorship

In order to test the hypothesis a rural health research project was begun in December 1973 with the objective of evolving a community-based health programme with people's participation. The project was sponsored by the Foundation for Research in Community Health, a voluntary organisation which is recognised by the Indian Council of Medical Research as a research organisation.

Source of funds

The Foundation is funded by donation from two of the trustees and various charitable organisations in India and abroad, such as the Volkart Foundation, Oxfam, and Christian Aid. The annual budget is roughly Rs. 1, 50,000 or Rs. 3 per capita. This includes the Government's budget of Rs. 30,000/- for Primary Health Unit (PHU).

Coverage

The project has two main sites : North Alibag *Taluka* and Uran *Taluka*, though the work in Uran is just beginning. The population covered is 30,000 and 60,000 respectively, and consists of agriculturists, fisherfolk and some tribals.

Objectives

1. To enlist the involvement and participation of the people in all programmes. The functional expression of this objective lies in the use of the Village Health Worker (VHW) at the base of the health service pyramid. This is a simple village woman, trained by the project staff, who forms the keystone of the health programme. She is also the token of the community's participation, since she is partly paid by the *Gram Panchayat* of her village.

2. To develop a model rural health scheme in a typically under-serviced area, with the goal that this model should be practical, feasible, and above all, replicable. On the one hand, this entailed studying whether an efficient and successful health service can be manned and run primarily by paramedical and auxiliary personnel, with just one doctor ; on the other hand it has to show that no matter how sophisticated the service, it is only when the community is made responsible for its health that lasting results can be achieved.

3. To evolve an efficient delivery system for both preventive and curative health care, with particular emphasis on the preventive approach.

4. To undertake a series of socio-economic programmes aimed at raising the general standard of living of the most poverty-stricken and

landless and in improving the environmental conditions which directly effect health.

Implementation of the scheme : The scheme is planned in three phases.

Phase I

In the first year, a community organiser was appointed, who began the difficult task of interpreting to the people the aims and objectives, of gaining their confidence and the support of the *Panchayat Samiti* and *Zilla Parishad* officials. One of his major goals was to discourage the conventional notion of welfare agencies being institutions of charity, and to promote the concept of development with participation. He also had to gain acceptance for the idea of one of the village women being capable of dispensing treatment.

A few months later, a young dedicated MBBS doctor joined the community organiser to help begin some rudimentary medical service. Because of his devoted service, he rapidly gained the confidence and trust of the community, and the VHWs trained by him gained support.

A baseline survey was also conducted in the first year by the Tata Institute of Social Science. The data collected from this survey gave some valuable clues regarding the needs of the community.

Also during the first eighteen months, a site was chosen for the building of the Primary Health Unit, which was planned to be constructed, vehicles were arranged on loan, personnel recruited, and the whole project was readied for the take-off stage.

Phase II—The Health Programmes

1. *The Village Health Worker* : Two training programmes were conducted in 1974 for these Health Workers, the curriculum included basic anatomy and physiology, nutrition, obstetrics, common ailments and preventive care. In all, 30 VHWs have been trained so far in the Alibag project, one for each village of about 1,000 population.

The main function of the health worker is to undertake home visits for three hours a day, during which time she is expected to treat any minor ailments, make note of any children under five years who have not been immunised, or are malnourished, find any antenatal cases, determine whether there are symptoms of tuberculosis (TB) or leprosy in any family member. The VHW is also a major tool of health education, since during the home visit she discusses nutrition, personal and community hygiene, and the cause of diseases. To treat ailments she carries a kit containing six drugs (sulphadiazine, sulphaguanidine, aspirin, piperazine, chloroquine and vitamins A and D) as well as some first aid equipment.

As will be seen later, the field experience has shown that VHWs can be highly effective. No matter how simple the training provided, there is continuous on-the-job supervision and reinforcement. The VHW can be trained not only to handle all minor illnesses but also to initiate preventive programmes in the village. The accessibility factor cannot be over-emphasised. A person with mild diarrhoea will certainly avoid treatment if it means travelling several kilometres, but the same man will seek the help of a health worker easily and cheaply accessible in his own village. Thus, potential case of dehydration and possible death is avoided.

Further, a village worker does not face the problem of "cultural aloofness", which most surveys have shown to be a significant factor affecting poor utilisation of services. Her effectiveness in contacting the village women and children is greater than any other outside functionary.

The VHWs who are part-time workers are in the 25 to 50 years age group and the education level varies from second to seventh standard vernacular. Two are illiterate and their children maintain the records. The experience has been that an older woman, who has had her own children is much more respected, despite her lower qualifications, especially when dealing with women and children. It has also resulted in a much lower turnover in this category of workers. The VHW gets Rs. 50/- as salary, Rs. 30/- from the *Panchayat* and Rs. 20/- from the Foundation and is chosen by mutual consent. A copy of her monthly report of work with remarks is signed by the doctor and is sent to the *Panchayat*.

The VHW is given a 10 days orientation course followed by regular inservice training. The effectiveness and confidence of the workers has shown marked improvement after a year of service.

2. *The Auxiliary Nurse-Midwife : (ANM)* : Since the VHW cannot function alone, the second tier in the health care pyramid is the ANM, who is called upon to aid the VHW. Each ANM is in charge of five villages. Her duties include, apart from supervision and reinforcement of the VHW, conducting antenatal clinics, giving triple-antigen and other vaccines, conducting deliveries, and looking at all those cases referred to her by the VHW. If the ANM feels any case or particular health problem requires further attention, it is referred to the doctor at the Primary Health Unit, which is run by the Foundation at the village of Dhokawade.

The Auxiliary Nurse : The village health workers' success as functionaries, however, is directly related to the quality and quantity of support, reinforcement, and continuing on-the-job training which they receive from their supervisors. The choice of the functionary for this supervisory role

is therefore important. Under the present system, the most effective choice is the ANMs. This is because, the bulk of the VHWs duties devolve around women and children, and thus the ANM, whose training is also maternal and child health oriented, is best suited to supervision of the village level worker. But in order to do this, the training programmes for ANMs require some basic changes. Thus far they have been trained as front-lines service providers, whereas they will now need to possess supervisory skills, backing up and reinforcing the village workers with their superior theoretical knowledge and skills.

3. *The Primary Health Unit :* The Primary Health Unit (PHU) doctor forms the apex of the pyramid. But even his role is different from the traditional curative one. He is expected to go out into the community, recognise various health problems, and initiate preventive measures utilising his entire team. The project Community Organisers and Social Scientists are also part of this team. The doctor also conducts out patient clinics at selected villages far from the main PHU, and these clinics will generally be attended by patients referred by the ANM or VHW.

4. *Doctor :* To complete the pyramid of functionaries, the type of training required for a PHC doctor must be considered. As was seen, the inappropriate training and cultural aloofness of the MBBS type doctor renders him unsuitable for the role of PHC leader, community organiser, disease-prevention expert and healer. It should be stressed here that the importance and necessity of curative medicine are fully appreciated, which is essential to win the confidence of the people, but a curative-oriented doctor simply cannot be effective when the key to health is prevention and cure. It is necessary therefore to train a totally different type of functionary for this purpose, who can fulfil the diverse roles expected of a PHC leader.

Although the project has not been of sufficient duration to draw definite conclusions it may be worth mentioning some of the positive as well as the negative points of such a service.

5. *Other Health Facilities :* The PHU also contains six beds for in-patients, a rudimentary operation theatre, and a small laboratory. Through the ANMs and VHWs the project undertakes to provide regular immunisation, prenatal and under-five care, TB and leprosy treatment and family planning.

6. *Socio-economic Programmes :* After the health service complex was reasonably well established a few socio-economic programmes were gradually and cautiously begun. The tribals and landless of the area were the first target-group, since their intense poverty made health care alone

meaningless for them. With aid from government and voluntary agencies, the tribals were encouraged to clear some of the land given to them under the 20-point programme, and one harvest has been cleared ; though the yield was poor, it has been a beginning for these people, who are traditional *nomads.* It was remarkable to see the change in health of these people once the nutritional needs were met.

Phase III—The present

Time has come to begin consolidating the gains and to start development programmes. Early this year, personnel were recruited for the Uran project and work there has begun. The one important difference is that in Uran the existing government PHC structure (the building and staff) is being taken and the staff will be retrained into multi-purpose or Basic Health Workers.

With the recent recruitment of two development engineers in both Uran and Mandwa, a comprehensive socio-economic survey has been conducted at their behest. The results of the survey are now being processed. Based on these results, it is intended initiate a number of specific programmes, such as sanitation, and water supply, always keeping community participation as the major goal.

The roles of the VHW, ANM and the doctor in the project are elaborated below :

Village Health Worker : In order to improve the productivity of the people by reducing mortality and morbidity, health care must be made highly accessible and prevention oriented. The best means of achieving this accessibility is through a VHW.

Evaluation

Village Health Workers

1. It may be stated with confidence that it is possible to effectively train in the field semi-literate middle aged women for health practice in their own villages.

2. The short and specific initial training must be followed by continuous inservice education and refresher courses.

3. They must have support and backing from the ANM, the doctor and the *Panchayat*, all of whom must understand her role.

4. Her great advantage is that she knows everyone personally in her community and there is no problem of rapport especially with the women and children. She is also the most readily accessible part of the health service.

The following problems have been noted in her work and that of others :

1. The villagers still find it difficult to believe that a semi-literate person with such short training can be an effective worker also that she does not give injections. The use of sulphaguanidine in the treatment of diarrhoea or benzylbenzoate in scabies and other cheap but effective drugs have gradually gained her the confidence of the villagers with regards to the effectiveness of her remedies.

2. She is more curative than preventive oriented which is probably the fault and shortcoming of training given to her.

3. Because of her previous life style her work pattern is unsystematic. However, this lack of professionalism also gives them a feeling of doing something useful in the community which improves their self image and creates an *espirit-de-corps*.

4. The ANM's trained for one and a half years in the vernacular at the district hospital are basically village girls and do not find difficulty in adjusting to the situation, unlike city counterparts like the Nurse Midwives. Yet their training is mostly curative oriented and hence they find difficulty in adjusting to the new supervisory role. The government ANM has a tendency to look down upon the VHW. Because of their cultural background the ANM is today the most efficient professional health functionary in the service.

5. The doctor has been the major problem. In spite of advertisements and attractive salaries, it has not been possible so far to keep him. But availability has been the greater difficulty, which proves the point that the present day doctors are simply not interested in rural service. Secondly, they have all exhibited an inability to utilise the personnel who have been trained. Their tendency has always been to do everything themselves, even if it is simple immunisation, rather than entrust it to one of the ANM's or VHW's who have been adequately trained. Even in follow-ups of specific cases they fail to prime the VHW on what needs to be done, preferring to visit that case everyday at the cost of some more important duties. All this serves to emphasise the fact that the doctors are unable to work within a health team, utilising all its resources and skills. In fact, they have generally disliked the task of supervising the auxiliary personnel, who are essential to maintain an efficient service.

Needless to add, all the doctors who have worked in the project have been totally curative-oriented ; it has fallen to the social scientists in our team to design preventive programmes. Finally, it was a surprise to note

the doctors' lack of ability to document or maintain proper records. They consider this a meaningless and annoying chore.

2. Problems of community participation and organisation

Over the last two centuries, the once-strong village tradition of self-sufficiency has been eroded, for various historical reasons. In its place has arisen a tendency for the community to expect all welfare measures to come from the government, which have been invested with the paternalistic role once held by the British Raj. Therefore, the people now expect various services to be provided to them as their due, without any significant contribution on their part. This is not surprising since even after independence most development programmes have been aimed at them as objects and not participants.

This orientation has posed one of the major difficulties in community organisation efforts. Along with this, has been the various social and political forces at play in every *Panchayat* and *Zilla Parishad*, which often hamper participation. Consequently the process of involvement has been slow and halting, and often situations have been faced where the community has expected the workers to 'give' a facility or service as missionaries. Equally important, the workers have often been tempted to assume this role.

The next problem which derives not only from the cultural gap, but from our professional training the problems of health or development are often very different from what the community views as their problems. This is an important dilemma faced by governments and people the world over. What the people see as their real "needs" are often radically opposite what the professional doctor or engineer or social workers see as their "needs." The temptation, therefore, is to tackle the "needs" as seen, and assign the people's view to second place, or to ignore it completely.

Ironically, such an attitude on the part of professionals only serves to deepen the chasm and reinforce the paternalistic image. For in effect, the worker would say, "I am a professional, a learned person. I know better than you what needs to be done for your upliftment".

In Mandwa, some measure of success has been attained in achieving participation in the health programmes for two reasons : (1) The community feels this need as much as the professionals do, and (2) therefore they are more willing to contribute towards fulfilling it. But in other programmes success has been very limited indeed because of a lack of confidence in determining needs.

In the light of experience, the following recommendations as an alternative to the present health system are suggested.

1. That the basis of the health service must be within the community who must be participants and not passive recipients.

2. That simple but effective functionaries be trained to work within the village.

3. Reorient the male and female paramedical workers as multi-purpose workers and also to help and supervise the village functionaries.

4. That medical graduates can function effectively only up to the district hospital level. The present doctor is incapable, both culturally and technically, to serve as the leader of a health team at the PHC or PHU level.

5. A new type of health functionary must be trained in the village setting to fulfil the tasks of the leader of the rural health team since there is no functionary at present suitable to fulfil this crucial function.

6. Unless such a new functionary with specific skills is prepared all attempts at delivery of health care at the peripheral levels are doomed to failure.

7. That the medical profession can only play a small but definite role in the health system.

8. That the planning, organisation and management of the health system should be by persons trained in these skills.

9. That medical colleges be curtailed to avoid the over-production of functionaries, who are not suited for the health care system required by this country.

10. That district hospitals be affiliated to existing medical colleges so that specialized care can reach the periphery where they are most needed by the people.

11. The available resources be redistributed to correct the gross imbalance between the preventive and curative services and between the urban teaching hospitals and the peripheral services. The present budget reveals a total neglect of the peripheral services, especially at the village level while the prestigious teaching hospitals, which are of dubious value, continue to drain a large portion of meagre resources of the country.

INTEGRATED HEALTH SERVICES PROJECT, MIRAJ

ERIC R. RAM*

Background

1. About 80 per cent of the people live in the villages while only about 20 per cent of the medical and health care are available to them. On the other hand only 20 per cent of the people live in the towns and cities and 80 per cent of medical and health care are available to them. Thus, a large disparity exists in the delivery of rural health and medical care.

2. Fully qualified nurses and other health staff do not like to live in the villages and even if they did they are not fully able to develop proper rapport with the rural people.

3. From time to time some vertical national health schemes like National Malaria Eradication Programme, National Smallpox Eradication Programme, Cholera Control Programme, Leprosy Control Programme, National Tuberculosis (TB) Control Programme, Irachoma Control Programme, Maternal and Child Health and Family Planning Programme, notification and control of communicable diseases, vital statistics recording etc. have been introduced by the Government. This may have been necessary in the early stages of these programmes, but in their maintenance phase considerable duplication of activities could occur. Thus, in one area several health programmes with their own sets of health workers are running side by side.

4. The voluntary health agencies like the Miraj Medical Centre were not relating to the Government health programmes, and running parallel health programmes.

Definition of the scheme

The project was designed to determine how best an infrastructure could be evolved out of existing services, facilities and personnel and utilise them in the provision of medical and health care in an integrated pattern for a vast rural population.

*Dr. Eric R. Ram, Ph. D., Project Director, Wanless Hospital, Miraj Medical Centre, Miraj, (Maharashtra).

Sponsorship

This is a joint project of the Government of Maharashtra, Sangli *Zilla Parishad* and Miraj Medical Centre.

Source of funds

Maharashtra Government and the Sangli *Zilla Parishad* pay for the existing staff. For extra inputs, funds are provided by the World Council of Churches in Geneva.

Coverage

This project covers the entire Miraj *Taluka* (*Tehshil*) 936 sq. km in Sangli district comprising 58 villages with a rural population of 2,30,329 (June 1976). There are three Primary Health Centres (PHCs) in this *Taluka*.

On the average one Auxiliary Nurse Midwife (ANM) has a population of 5,750 and one Basic Health Worker (BHW) has 8,200 to cover.

Services and benefits provided

By female staff

1. *Maternal care*
    1. 100 per cent antenatal registration.
    2. Antenatal care.
    3. Delivery-35 per cent deliveries are conducted by ANMs in the homes, 60 per cent deliveries are conducted by trained dais, three per cent deliveries are conducted by patients' relatives, two per cent deliveries are conducted by PHCs and hospitals.
    4. Postnatal care.
    5. Nutrition education, demonstration, supplements.
    6. Supervision of *dais* deliveries.
2. *Child care*
    1. Registration of children under five years of age.
    2. Weighing and keeping growth chart ('Road to Good Health').
    3. Immunization—BCG, DPT and Polio.
    4. Nutrition—education, demonstration, supplements.
3. *Family planning*
    1. Survey.
    2. Uptodated eligible couples' list according to parity and protection for family planning.
    3. Family planning advice and motivation.

4. Supply of pills and *Nirodh*.
5. Follow-up of sterilized couples and contraceptive users.

4. *Medical care*
   1. Treatment of minor ailments half a day every day.
   2. Referrals of difficult and abnormal cases to the PHCs and the district hospitals.

5. *Health education*
   1. Home visits half a day every day.
   2. Health teaching.
   3. Demonstration.
   4. Use of simple audio-visual materials, jet cards, flip charts and flannel graphs.

6. *School health*
   1. Health teaching.
   2. Physical examination of school children and follow-up.
   3. Physical education.
   4. Environmental sanitation.

7. *Coordination of activities with male staff*

   All births, deaths, fever cases and children unprotected against small-pox are reported to male staff.

Training and utilization of indigenous 'dais'

The base line survey of 1973 revealed that in the project area about 80 per cent of the deliveries were conducted by the untrained '*dais*'. As such 186 '*dais*' were identified who were practising at that time. Thus, out of 186 practising indigenous '*dais*' in the 58 project villages, 173 (93 per cent) have been trained. Each '*dai*' is supplied with an autoclaved sealed delivery pack, the cost of which is Rs. 0.50 per pack. She uses one pack for every delivery she conducts. She also motivates her patients for family planning.

Some '*dais*' of those villages, where there are no health centres, are also given training in simple symptomatic treatment of minor ailments. Their effectiveness will be measured after one year.

Training and utilisation of Indigenous Village Health Assistants

All the 40 part-time attendants working for the 40 ANMs are indigenous women. They have now been retrained to be Indigenous Village Health Assistants, thus turned into very useful members of health team.

By male staff

1. *Detection of infectious diseases* : Each household is visited by the health staff once a month for the purpose of giving health teaching and enquiring about the occurrence of any communicable diseases like smallpox, cholera, typhoid, dysentery, malaria, infectious hepatitis, polio etc.
2. *Vital statistics :* Births, deaths and marriages are recorded and reported for each village separately every month.
3. *Smallpox :* Smallpox search; special emphasis is on neonatal vaccination, primary vaccination, revaccination at an interval of three years.
4. *Malaria :* Detection of fever cases and collection of blood smears from them; positive cases are treated by the Health Inspectors and focal spray carried out.
5. *TB :* Detection of suspected TB cases and collection of sputum from all cases with fever and persistent cough for more than three weeks.
6. *Leprosy :* Detection and reporting of leprosy cases in their early stages and their follow-up.
7. *Family planning :*
    1. Identification and maintenance of monthly updated list of eligible couples for family planning.
    2. Motivation of eligible couples for family planning. Advice on terminal methods for those with more than two children, for others use of conventional methods.
    3. Distribution of *Nirodh* during monthly visits.
    4. Follow-up of vasectomised cases.
8. *Environmental sanitation :*
    1. Disinfection of wells with (TCL) once a week.
    2. Construction of soakage pits and inexpensive water seal latrines.
9. *Health education :*
    1. Health teaching to the families during house visits once a month.
    2. Health teaching through various audio-visual aids.
    3. Health teaching through demonstrations etc.
10. *School health :*
    1. Regular visits to schools are made for survey.

2. Health teaching.
3. Screening of various ailments.
4. Environmental sanitation.
5. Inoculations.

11. *Treatment of minor ailments :* During the house visits simple medical care is provided for fever, diarrhoea, cough, eye infection and first aid for minor injuries, particularly in the outlying hamlets.

12. *Inoculation :* Cholera and typhoid inoculation.

13. *Coordinatian of activities with female staff :* All cases of ante-natal and postnatal care, deliveries and unprotected children for BCG, Polio, DPT etc. are reported to the ANMs by the BHWs.

8. *Personnel, facilities and resources*

In this project both male and female health staff have been utilised. Before integration there were 41 male government health staff already working in the field in various health services. Of these male staff members, nine were Vaccinators, three Sanitary Inspectors, 19 Malaria BHWs, five Malaria Health Inspectors, one Senior Sanitary Inspector and three Family Planning Coordinators. After six months training all the unipurpose health staff were converted into integrated health staff. Nine Vaccinators and 19 Malaria BHWs were trained to be 28 integrated BHWs three Malaria Health Inspectors, three Sanitary Inspectors and three Family Planning Coordinators retrained into nine Integrated Health Inspectors, two Senior Malaria Health Inspectors and one Senior Sanitary Inspector retrained into three Integrated Health Supervisors.

Similarly before integration there were 30 female health staff, out of whom 24 were ANMs and six were Nurse-midwives (NMs). To those 16 ANMs, four NMs and two Public Health Nurses (PHNs) have been added. The female staff have also undergone six months additional training in community health nursing.

There are six Medical Officers in the three PHCs in the project area.

In addition to the three PHCs, one rural sub-centre has been opened for every ANM outside the PHC. Space for clinic and the house for the nurse to stay is provided. A water seal latrine has been built for each ANM. This is also used for demonstration in the village. Each nurse is a resident nurse. Necessary medicines, vaccines and other non-medical supplies are given to them as per their requirement every month.

9. *Mode of Payment for Personnel*

Once a month, usually on the third or fourth, all project staff gather in Miraj for one day training-cum-conference. It is during this meeting

that all staff submit their monthly reports to their respective supervisors after which they are given a green "clearance slip". This they present to their respective disbursing officers, who come to the project offices to pay their salaries. The salary is withheld until green "clearance slip" is produced by the health staff.

10. *Factors affecting quality of services and difficulties*

Factors which affect the quality of services are :

1. *Staff :* Their training, age, past experience and their own motivation.
2. *Community :* Community that is involved, participates and cooperates more in health activities.
3. *Working condition :* A congenial atmosphere, respect, cooperation and mutual trust.
4. *Physical facilities :* Place to live in and a place to hold clinics and provision of basic equipment, medicines and other facilities as and when needed.
5. *Supervision :* Direct and constant supervision in the form of education, guidance, help and problem solving, helps much. Concurrent visits seem more useful than consecutive visits. Methods of memo-writing have been replaced by solving problem with the worker.
6. *Feed-back and review :* The staff submit their monthly reports to the project office once a month. When these are reviewed and feed-back given to the workers about the progress of their own work as well as in relation to other staff it helps much. Individual review is just as beneficial as the group review of their sector.
7. *In-service training :* Initial training is essential but in-service training on a regular continuing basis is much more beneficial to the health staff.
8. *Health supervisors :* In a three tier system Health Supervisors play an important role as coordinators and provide liaison between the field staff and the administration. Their constant presence in the field keeps the field staff on the go.
9. *Smaller workers/population ratio :* One ANM/5000 assisted by trained '*dais*' and the one BHW/7500 is workable and practicable.
10. *Availability of basic medicines :* Availability of medicines for treatment of minor ailments and first-aid kit helps increase the acceptability and utilization of health staff in the community.

11. *Monthly meetings :* An atmosphere of mutual trust and cordiality has helped the worker to freely share his experiences and problems with his colleagues and supervisors.

12. *Epidemics :* Epidemics have become the responsibility of the whole sector. Thus a team approach giving a sense of confidence has developed in the health staff to tackle the epidemics.

13. *Provision of adequate medicines and materials :* Once the health staff are adequately provided with their monthly need of medicines and other supplies they are happy and their work does not suffer. Thus the output of work is more.

14. *Printed registers :* Printed forms for records and reports have prompted the workers to record and report in time and accurately.

15. *Self-respect and self-confidence :* Because the health staff are responsible for the provision of multipurpose health services, and they are trained in them, their self-respect, confidence and image have improved much in the community, making their services more effective.

16. *Leave reserve :* Presence of 10 per cent leave reserve has allowed the health staff to take their earned leave when they need them without the health services having to suffer.

Difficulties

1. The salary scales and allowances of the Vaccinators and the Malaria BHWs were not the same, so the workers felt that if they were to be integrated and do the same type and amount of work, their salaries and allowances should also be the same.

2. Before integration most health workers had a larger population to serve and an area more than 8 km in radius, so they travelled more than this distance and were eligible for getting travelling allowance (TA) as per government rules. However, in integration all have much smaller population and work areas in most cases are within 8 km and they are administratively ineligible for TA. Although, the work area is reduced but their activities and amount of work has increased many folds.

3. In the first year there was no leave reserve which hampered health services during the absence of health staff.

4. Many vacant posts of ANMs were not filled for a long time.

5. Certain categories of staff found it rather difficult in the beginning to follow an advance day and place schedule.

6. The older health staff who had worked for several years in the earlier pattern found it difficult to adjust to the new system and have shown certain amount of resistance.

7. Questions were raised about the training and utilization of Health Supervisors in a three tier system in the first year of the project.

8. The six Medical Officers of the three PHCs presented the greatest resistance to integration. In spite of best efforts their visits to sub-centres were only 55 per cent of the total expected in 1975. They looked upon a sub-centre visit as something of an extra work imposed upon them which interfered in their private practice during their "off days". They preferred to continue with the old pattern.

   As it is, the frequency of Medical Officers' visits to the sub-centres is far from satisfactory. Even then it is mostly to hold clinics. They have not shown any interest or initiative in supervising the work of the health staff, particularly the male staff. Medical Officers' performance in preventive aspect of health care is practically nil.

   They have also proven to be a failure as a trainer and teacher of health staff in their PHC jurisdiction.

9. Transfer of trained staff out of project area created the problem of rearranging new training sessions for the new staff. Since they were very few in number and all of them did not come at one time regular training could not be arranged for them. Because of this the staff coming in new tended to be weaker in their knowledge, motivation and services.

10. Although the BHWs detected cases of leprosy early, but their confirmation by Leprosy Technician (LTs), by Hind Kushta Niwaran Sangh and *Zilla Parishad* and starting of the treatment was delayed up to six months or more. This demoralized the staff and the patients alike.

11. The BHWs collected sputum from suspected TB Patients and many were found to be positive. However, the Medical Officers incharge (I/C) PHC did not take full cognizance of the implementation of treatment of TB patients at the sub-centre level.

12. Although the BHWs and ANMs visited the house-holds very regularly and BHWs visited each household once every month inquiring about fever and fever with rash, along with many other questions, still all project staff's regular work had to be interrupted several times in a year for active smallpox search. The same difficulty was experienced during family planning campaigns.

Such deviations with special emphasis on only certain health activity do little to enforce integration.

13. In 1975 three times more malaria positive cases have been detected as compared to 1974. This was unexpectedly very high and in some sectors more positive cases were reported than the Health Inspectors could carry out the radical treatment at the same time. In such a case Health Inspector could only start the radical treatment while BHWs had to carry out the radical treatment for the next four days. On the fifth day of the radical treatment, the Health Inspector came again to check.

14. The greatest difficulty experienced has been the state-wide shortage of triple antigen, tetanus toxoid, and BCG vaccine. If the vaccines were available in sufficient quanity the immunization work would be still better.

    Similar shortage was experienced about iron and folic acid tablets as well as vitamin A syrup.

15. Although the Medical Officers of the PHCs received certain amount of medicines from the District Health Officer for the use at the sub-centres, but invariably they never reached the sub-centres. The reason given by Medical Officers was that the quota was too small even for the PHC.

Methods of enforcement of control

In a community health project strict control in its true sense is very difficult to enforce, as the control group should have a comparable socio-economic and health status to the experimental group. The closest to Miraj in this regard was Kolhapur. But a somewhat similar project is already going on there. So Kolhapur could not be selected to be a control.

Other *Talukas* in this area are very different and would not give a fair comparison. Thus, it has been decided to compare the data at the end of the project against the baseline data, as well as with previous year's performance in relation to the average performance of the other seven *Talukas* in Sangli district.

Evaluation

1. A baseline survey on the basis of 10 per cent random sample was conducted in the beginning of the project. Again an evaluation survey on the basis of 10 per cent random sample was conducted in the last half of the third year. The difference between the surveys will measure the change.

2. A system of continuous monitoring of data on all activities and achievements has been operating throughout the project. Each worker's performance of each month for each activity is maintained and progress compared with his own previous performance as well as with other staff's progress in relation to the overall performance of the project.

   A feed-back system for the health staff on quarterly basis for an average worker and on monthly basis for the weaker one has proved to be very effective.

3. An evaluation on the basis of the comparison of the emperical data for pre-project years and the data of the project years indicate the change in the over all performance.

4. It is hoped that an indigenous method of evaluation would be evolved to compare the individual progress of a unipurpose health worker with that of his own as integrated health worker. Unfortunately, previous individual records for the pre-project years are not available in the district which makes it difficult to carry out such an evaluation.

Scheme of Subsidised Medical Care Based on a Self Sustaining System of Health Co-operatives

COMMUNITY HEALTH CARE

A. Krishna Rao*

Background

When the Kasturba Medical College was started in 1953, the sponsors' aim was to have the preclinical training at Manipal and have the clinical training at Mangalore—64 km from Manipal, making use of the government hospital facilities at Mangalore. Since 1965 in order to have clinical training of students at Manipal itself a hospital was started with the help of a private society (Medical Relief Society). Now this hospital has 640 beds. Medical Relief Society runs also seven rural maternity and child welfare homes.

To improve the training of the undergraduates and to offer better service to the community, extension service was started, covering four broad areas :

1. Medicare
2. Camps
3. School health care
4. Rural maternity and child welfare homes.

I. Medicare

Medicare : is a comprehensive medical and dental health care scheme introduced by the hospital on January 1, 1972.

Who can enrol : (1) Those whose income is less then Rs. 2400 per annum are given free medicare of category 'D' for himself and his family for the first year. To avail of the benefits of medicare for a longer time he has to accept the small family norm and donate blood twice a year.

(2) A group of persons belonging to a particular institution or category will be enrolled in this scheme on payment of premium at the rates given below.

(3) Individuals other than those belonging to a group may be enrolled after a thorough medical check-up at this hospital.

*Dr. A. Krishna Rao, M. B. B. S., M. Sc., Dean, The Kasturba Medical College, Manipal (Karnataka)

When to join : Admission to this scheme is done twice a year—i. e. on first of January and first of July. The minimum period for which a person can be enrolled is one year.

How much to pay

The rate of annual premium is as follows :

Category	Type of accommodation available if hospitalized	Amount payable under single benefit plan	Amount payable under family benefit plan. (husband, wife and up to three dependent children)
A	Special Room (one in a room)	Rs. 90/-	Rs. 270/-
B	Semi-special room (two in a room)	Rs. 60/-	Rs. 180/-
C	Semi-private (four in a room)	Rs. 30/-	Rs. 90/-
D	General ward—(more than four)	Rs. 9/-	Rs. 27/-

Note : Any person who donates blood from the family twice a year will get 'D' category benefit to his family free of charge.

What are the benefits

The enrolled members and their eligible dependents in case of family benefit plan, are eligible for the following services free of charge at this hospital as per the hospital rules in force during the contract period.

1. Consultation, examination and advice.
2. Laboratory tests.
3. X-rays.
4. Electro-cardiograms.
5. Operations—major and minor.
6. Confinements (not more than three).
7. Hospitalisation-bed, room and nursing care.
8. Dental.
9. Medical and hospital services excluding diet and drugs.
10. All service charges in the case of dialysis, prosthetics, cobalt therapy, dentures etc. However, actual material cost has to be met by the member in these cases.

Coverage

1. Institutions near the hospital have been covered by their managements.
2. Surrounding population has been surveyed and free medicines etc. Category 'D' is being given for all the families whose income is less than Rs. 2400/-. So far 3000 families have been covered.

Personnel of the College Hospital have been used to provide service.

Payment for personnel is done from donations collected from students and others.

2. Camps

Ophthalmic camps

Two types of camps are conducted :

1. Eye clinics where patients are examined in a camp in a rural area. Cases needing operations are brought to the base hospital. They are operated and sent back. Operations are done free. Refraction is done and glasses are prescribed.

2. Surgical blind relief eye camps where the patients are examined and operated. During the last seven years 45 camps of this type have been conducted. These camps are organised only in rural areas.

Cases of cataract, glaucoma, chronic dacryocystitis etc. needing surgery are identified and operated at the camp itself. Refraction is done and glasses prescribed. For cataract patients free glasses are given after the operation.

These camps are for 10 days.

Source of funds

Royal Common Wealth Society for the blind has provided a grant which roughly covers the transport and medical expenses. Equipment and technical personnel are given free by the Kasturba Medical College Hospital. The boarding and lodging of the patients and the propaganda work are carried out by local welfare organisations like Lions Club, Rotary Club etc.

From July 1975 to May 1976, 36 camps have been conducted, of which 24 are eye clinics and 12 are surgical blind relief eye camps. A total of 10,614 patients have been examined and 1,167 have been operated upon.

A ten day camp costs :

	Item of expenditure	Actual amount	Agency bearing the cost
1.	Proportionate pay of staff for 10 days	Rs. 1,800	College

2.	Cost of transport, medicines spectacles etc. for an average camp for 125 operations	Rs. 5,000	Royal Common Wealth Society Fund
3.	Diet, accommodation, etc.	Rs. 10,000	Local sponsoring agency

Dental camp : These camps are also sponsored by service organisations, *Panchayats* etc. The manpower is provided by the College. The sponsoring body provides for transport, publicity, drugs etc. In these camps, mainly the relief procedures like extraction of teeth, drainage of abscess, prescription, examination and advice are carried out. Patients requiring further treatment are referred to main hospital.

Besides these, other camps are conducted occasionally in the following specialities :

1. Medicine.
2. Ear, nose and throat (ENT).
3. Surgery.
4. Obstetrics and Gynaecology.

3. School health care

The schools in the neighbourhood are covered by this scheme. This includes medical, ophthalmic, dental and ENT care.

After a preliminary medical check-up the schools are visited by the staff and students of the ophthalmic and dental department separately.

School dental health care : Staff and students visit the school every day by prior appointment till all the students have been covered. Like this each school is covered by turn.

Every child is examined and advice-letters to parents are sent. All treatment procedures that can be carried out in the school are done i.e., scaling, polishing and phosphylaxis, temporary filling of teeth affected by caries.

Advice is given on preventive and home care methods.

Ophthalmic care : Ophthalmic check-up is done and glasses are prescribed where necessary.

Deafness identification : The school children are brought in batches to the hospital and their hearing tested. Where a child is deaf treatment is given.

All school going children are covered by diphtheria, pertussis and tetanus (DPT) immunization and typhoid and paratyphoid A and B (TAB) inoculation.

One rupee is collected from each child by the headmaster and given to the hospital for these services.

Many times the patients are so poor that their health will improve only when their general economic standard improves. Therefore concerted efforts must be there to improve the general economic standard.

4. Rural maternity and child welfare homes and plans for future

1. Medicare will be extented to the surrounding *Panchayats* to cover more people.

2. Rural maternity and child welfare homes are being expanded to provide some extra space. It is intended to have an out-patient service there and to post an Intern and a doctor to look after that.

3. Intensive health education and action to cover the following diseases :

a. Tuberculosis.
b. Dysentery.
c. Infestation by worms—ankylostomiasis.
d. Leprosy.
e. Malaria.
f. Filaria.

4. It is proposed to ensure safe water supply and good disposal of sewage with the help of the *Panchayats*.

5. Pest control measures to be intensified by involving the community and all service institutions. It is proposed to observe the following weeks :

a. Rat control week.
b. Cockroach control week.
c. Fly control week.
d. Mosquito control week.

6. Family planning programme to be intensified by involving all people and making the family planning services freely available.

7. Following Prophylactic inoculations will be done to cover the entire population of the surrounding areas.

TAB
Diphtheria and tetanus (DT) or
DPT
Polio-vaccine
Smallpox vaccination
BCG

A COMMUNITY APPROACH TO HEALTH CARE SERVICES BY POPULARISING COOPERATIVE RURAL DISPENSARIES*

M. V. GEORGE**

Background

For a nation committed to democratic process of development, the role of voluntary and community organisations in fostering growth is as important as it is pressing. Perhaps no other field is more deserving of community concern and group action than health care system. From the experience of investment planning in the past, it has become evident that too much of government's limited capital resources could not be tied-up in social services and that comprehensive health care through government agencies alone would be impossible for many years to come.

Public investment on health care systems

Since the country launched its programme of planned development the outlay under health programmes have been continuously on the rise. It rose from Rs. 1400 million in the First Plan to an estimated Rs. 9400 million in the Fifth Plan, recording an increase of nearly 700 per cent in 1974-79 over 1951-56.

Similarly in Kerala the plan outlays on health services experienced nearly a ten fold increase during this period. The total budgeted expenditure on medical and public health recorded a twelve fold increase from Rs. 265 lakhs to Rs. 3309 lakhs in 15 years from 1967-68 to 1975-76. In 1975-76 the expenditure on health services alone accounted for 15.5 per cent of the total state budget and 33 per cent of the total development expenditure. In terms of the per capita expenditure on health services also there has been a three fold increase from Rs. 3.67 in 1962-63 to Rs. 11.23 in 1974-75. However, despite such increasing expenditure the standards of health services can in no way be compared to that of the more developed countries.

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*The scheme for Cooperative Rural Dispensaries is being implemented in Kerala State and as such the Project described here is not a new one. The desirability of popularising the community approach on a countrywide basis with necessary modifications in the light of the experience in Kerala State will have to be explored.

**Dr. M. V. George, Chief Evaluation Officer, State Planning Board, Trivandrum, (Kerala).

Primary health centres for rural service

In order to strengthen the rural health services system the Primary Health Centres (PHCs) have been strengthened during the Fourth Plan period for undertaking the preventive and curative health services and for ensuring the maintenance phase of the communicable disease control and eradication programmes. However, their functioning has not been as effective as they were originally intended on account of various shortcomings such as :

1. Overcrowding of patients in PHCs and inadequate staff for the multiple functions entrusted to them;
2. Lack of timely and adequate supply of medicines to the tune of 30 to 40 per cent of requirements. What is more distressing is the inadequate stock of life saving medicines; and
3. Lack of proper supply of needed surgical equipment and ill equipped laboratories for general investigations.

While efforts should be made to fill up these gaps before undertaking further expansion programmes, alternative methods of spreading health care services to rural areas need to be explored. Moreover, there has also been a strong realisation that employment to medical personnel and health care systems in rural areas could be more rapidly stimulated by private efforts and government resources could be more effectively used in other ways than through direct establishment of government health care centres.

Further, there was also need to alleviate the problem of unemployment among the medical personnel in Kerala which called for remedial action. For this purpose a scheme was drawn up for utilising their services in the rural areas under the Half a Million Job Programme. Thus the idea of cooperative rural dispensaries took shape as a pioneer attempt as a self-help programme of rural health care system implemented through community participation.

Definition of the scheme

According to the scheme for Cooperative Rural Dispensaries, the Cooperative Dispensary will function as a self-contained medical unit rendering day-to-day medical care both on curative and preventive sides. The Registrar of Cooperative Societies will be in-charge of the implementation of the scheme.

The Cooperative Dispensary will have the services of a full-time Medical Officer. The Dispensary will have a small inpatient ward with eight beds and will run a clinical laboratory for routine testing of blood, urine etc. and a pharmacy.

The scheme envisages two types of membership for the society-A-Class and B-Class. A-Class membership will be restricted to the employees of the Dispensary and B-Class to individuals residing in the area of operation of the Society. The Cooperative Society is to have a minimum initial membership of 127 members (7 A-Class and 120 B-Class).

Sponsorship

The Cooperative Rural Dispensaries are to be sponsored by local cooperatives to be formed specially for the purpose.

Source of funds

The authorised share capital of the dispensary will be Rs. 1 lakh (one hundred thousand) divided into 4,000 shares of Rs. 25 each. Among the employee members, the Medical Officer is expected to contribute Rs. 1, 500 as share capital of which Rs. 500 will be paid at the time of admission and the balance of Rs. 1,000/- in 25 equal monthly instalments of Rs. 40/- each. The other employees will have to contribute Rs. 500/- each, of which Rs. 250/- has to be paid at the time of admission and the rest in 25 monthly instalments of Rs. 10/- each. The B-class members will take at least one share of Rs. 25/- at the outset which will be paid in lump-sum. Thus the initial share capital contributed by members (7 A-class and 120 B-class) will be Rs. 5,000/- Government will have to contribute an amount of Rs. 15,000/- as share capital to the Society. Thus altogether the Society will raise Rs. 20,000 as share capital at the outset which is expected to be enhanced gradually to Rs. 35,000/- within a period of two years. In addition to the share capital contribution, government will contribute Rs. 15,000/- as grant-in-aid for the purchase of furniture and equipment for the dispensary.

It is expected that on the average there will be 50 consultations per day and about 10 cases requiring routine tests for blood, urine or stool. At the rate of Re. 1 per consultation and Rs. 2 per routine test, the daily gross income can be estimated at Rs. 70/- and expected monthly income for 26 working days at Rs. 1,820. In addition a sum of Rs. 100 can be taken as income from sale of drugs and injections. Thus the dispensary will be able to earn an average monthly income of Rs. 1,920 as against the monthly expenditure of Rs. 2,350. Thus there will be a deficit of Rs. 430/- per month. Hence a managerial subsidy of Rs. 500/-per month, or Rs. 6,000/- per annum was proposed to be given by the government to each society to compensate the above deficiency. It is assumed that within a period of two to three years the Cooperative Dispensary will augment its income so as to make it self-sufficient.

Coverage

The area of operation of a Cooperative Dispensary will be one *Panchayat*.

Services and benefits provided

The dispensary will provide medical care in its area of operation both on the curative and preventive sides. The Medical Officer will be residing in the premises of the dispensary and his services will be available at any time required in emergencies. His quarters will therefore be attached to the dispensary and will be free of rent. The laboratory attached to the dispensary provides facilities for the routine testing of blood, urine and stool. There will be also a pharmacy attached to the dispensary to dispense medicines to the patients at fair price.

Personnel facilities and resources

Besides the Medical Officer, the dispensary will have the following staff.

Nurse/Midwife	..	1
Pharmacist	..	1
Technician	..	1
Manager-cum-Accountant	..	1
Attenders	..	2

The staff employed in the Dispensary will be given a consolidated pay at the rates as given below :

Doctor	..	Rs. 750/- per month
Nurse/Midwife	..	Rs. 200/- ,,
Pharmacist	..	Rs. 200/- ,,
Technician	..	Rs. 200/- ,,
Manager-cum-Accountant	..	Rs. 300/- ,,
Attender	..	Rs. 150/- ,,

Mode of payment for personnel

The dispensary will directly pay all the personnel employed.

Factors affecting quality of services, difficulties faced etc.

Attractive features

Some of the attractive features of this scheme deserve special mention.

1. The doctors—most of them young—manning these dispensaries are anxious to build-up their reputation and exhibit a sense of dedication to their work.

2. The quality of medicines they dispense is better and prices charged are competitive or even slightly lower than those charged by other private institutions and medical shops. As these dispensaries are entitled to reduced hospital rates for bulk purchase of medicines from authorised dealers and the doctors are free to purchase these, as and when required, there is no room for complaint regarding shortage of medicines or lack of stocks regarding life-saving drugs.
3. Being under cooperative management these dispensaries provide facilities for local involvement and participation with respect to both preventive and curative health services to the local community.
4. Above all they make only a minimum demand on the budgetary resources of the state and help to mobilise private resources for the public good. Although they do not dispense services free of cost to the poor, they cater to the needs of middle income groups and to that extent reduce rush in the PHCs and government dispensaries.

Main difficulties

Among the bottlenecks in the implementation of the scheme are :

1. Uncertain and not too attractive service conditions of the doctors and the paramedical staff. It would be desirable if their service conditions are placed on par with that of their counterparts in the government, to ensure continuity of service and sufficient incentives.
2. Lack of proper guidance and supervision from the medical department, the cooperative dispensary being treated as a step-child of the cooperative department. As they supplement the work of the PHCs these dispensaries also could be entrusted with some of the preventive aspects of health services, such as, health education, family planning etc. for which their tradition of local participation is an asset.

Methods of enforcement of control

The management of the affairs of the dispensary shall rest in a Board of Directors consisting of nine persons as shown below :

One member elected by the A-class members;

Three B-class members elected by such members;

Five government nominees.

Being a Cooperative Society the Registrar of Cooperative Societies will have overall control in the affairs of the dispensary.

Evaluation

Judged by the experience of the past three years this pilot scheme holds much promise as is evidenced by the incessant demand from the public for opening of more and more dispensaries in the countryside. The performance of these rural dispensaries has to be evaluated not merely in terms of their economic viability but their contribution to rural health services and enlisting of popular participation. Further, they help to supplement the work of the PHCs and government dispensaries at a much lesser cost to the public exchequer.

SERVICE RESPONSIBILITY OF A DEPARTMENT OF COMMUNITY MEDICINE THROUGH A HEALTH CO-OPERATIVE

B. MAHADEVAN*

Background

Health facilities in rural areas in the country were provided through Primary Health Centres (PHCs) started as part of a national rural development scheme called "Community Programmes" in 1952, with a very modest staff in each centre to form the nucleus of integrated health services and cater to the need of about 60,000 population in a Block. There are now over 5,200 PHCs, each Centre caters to a population ranging from 80,000 to 1,20,000. Each PHC therefore has to take care of a very large number of persons. The scheme was extended to involve Medical Colleges in rural health work and through deliberations of many committees, the status of PHCs was improved both qualitatively and quantitatively. An integrated approach of providing health services to the rural people, with the provision of two doctors to every PHC and a Basic Health Worker (BHW) with an Auxiliary Nurse Midwife (ANM) to every 10,000 population, was attempted.

A pilot Mobile-cum-Training-cum-Services Hospital Scheme was introduced in some Medical Colleges with a view to involve medical and nursing students in rural community medicine. The intention was to establish ultimately one mobile hospital per medical college. More medical Colleges were established with the sole purpose of providing rural health services. Specialist camps were organised for cataract operations, vasectomy and tubectomy. Although the government's idea is to train doctors for rural areas, these doctors are not attracted to such places. The migration of Indian doctors to the more developed countries continues. Even passing of a Parliament Act which empowers government to oblige doctors and engineers below the age of 30 years to work for a period of four years in rural areas, the problem remains unsolved due to the inability of providing reasonable living conditions for them in villages.

Some medical colleges like Vellore Christian Medical College incorporated in their teaching programme, the rural dimension in a significant

*Maj. Gen. B. Mahadevan PVSM, AVSM Professor and Head of the Department of Community Medicine, St John's Medical College, Bangalore (Karnataka).

way. The organisers of the Community Health Centre, have found that it costs about Rs. 8.50 per person per year, which includes preventive, promotive and curative services. The administration is not very happy about this project due to the high recurring costs.

The Kerala Government with Government of India's initial one time grants, have established Health Co-operatives in 11 districts. Doctors are encouraged to seek self-employment in these co-operatives. Doctors and paramedical staff take shares in these co-operatives. A certain fee is levied on services, and medicines are also paid for. One is looking forward anxiously to the success of the scheme. The initial reaction of the people has been good.

Voluntary agencies have established a large number of hospitals in urban areas. However, funds are not available to these hospitals for any significant rural health work, although an increasing number of dispensaries are being opened in the rural sections of the country.

From the facts and figures just given, it is clear that the government in spite of its herculean efforts has not been able to seriously tackle the problem and with the scarce allotments made for the health services, no tangible improvements is possible in the near future. No voluntary agency can hope to embark on a scheme where even the government has failed, but is in a better position to try out new methods through pilot projects.

When planning rural health services, one has to consider two components, namely the delivery of package of rural health services in villages and the recruitment of personnel who will deliver the same. At the same time, there is an inescapable need for complementary services which will develop the village economy and education of the rural people. Many rural health schemes taken up enthusiastically at the beginning flounder for lack of popular support that has to be expressed by financial contributions. This is the crux of the matter. Any health delivery scheme should be a self-sufficient fiscal entity. This may be a limiting factor but the only sound way of attempting to solve rural health problems, is to start it in places where conditions are favourable for the introduction of self-supporting scheme.

Funds for rural health schemes may be raised through many ways

1. Tagging health services to co-operatives.

To start health co-operatives by themselves is difficult, as health holds a low priority in the felt needs of the people and may not get the required support in the initial stages. The procedure of tagging on health services to existing co-operatives has many advantages—good leadership, a ready-

made frame work of community administration for introduction of effective health services and community involvement, as channels of communication with the people have already been established. Co-operative Dairying and Marketing Co-operative of different commodities like grains, cereals, cottage industrial products etc., lend themselves admirably to this type of health services.

2. Running health services with assistance from factory administration where labourers are from villages nearby.

A minimal deduction at the source of salary and a contribution from the factory management will help to build-up the required funds and formation of a health co-operative. Geographical location of industries and rural labour in close proximity are limiting factors but the scheme is worthy of trial, in special areas.

3. Assistance from *Panchayats.*

Places where *Panchayats* and the people are interested in health services and are willing to contribute to the same, may venture on this method, but unless sufficient funds are forthcoming regularly and persistently the scheme will collapse.

4. Starting with services and evolving a co-operative at a later stages.

A devoted team of health workers can establish themselves in a village and build-up the required clientele and popular opinion. The people can then be induced to form a cooperative and directly employ the doctor and essential paramedical staff. Until such time, a central agency or other funding agency may have to meet the expenses. This can be attempted even without forming a co-operative in areas of affluence, where people are willing to pay for the health services and employ the doctor and other staff through collection of revenue for the purpose.

The Mallur Milk Co-operative (MMC)

Mallur is a village in Kolar district of Karnataka, situated about 60 km. from the city of Bangalore. The Mallur Milk Co-operative (MMC) was an established concern with a sound and progressive leadership and has been functioning for many years. In addition to production and sale of milk, it provides other benefits like provision of fodder and cattle foods, tractor facilities and looms at low rates of interest.

Besides the people of Mallur, two other villages, Muthur and Kachahalli are members of the Co-operative and the total population covered is about 3,000. These villages have a silk farm cooperative besides cooperative dairying. The economic position was satisfactory, and therefore all

conditions were favourable for the introduction of other self-supporting schemes.

The inspiration for establishment of a Comprehensive Health Care Programme for the cooperative members and their families of these villages, came from Sr. Anne Cummins of Coordinating Agency for Health Planning and Fr. Jones of the Catholic Bishope Conference of India. With these pioneers, the Dean and the Department of Community Medicine of St. John's Medical College, representatives of the Karnataka Government and Bangalore Government Dairy with leaders of the MMC worked out a scheme for tagging on a health service to it.

Definition of the scheme

The main objectives of the Mallur Health Project are :

1. To study and devise methods by which the financial base needed for effective health services could emerge from the people themselves in a self-sustaining manner;
2. To help in the establishment of rural health centres with the staff and rendering of effective health services to a wide circle of needy people without distinction of race, caste or creed;
3. To study the required strategy and methodology for the effective rendering of primary health care in rural areas by trying to determine the priority areas in health care and devising the structure found suitable to village conditions;
4. To help in those developmental activities which are very necessary to ensure effective rendering of health services in rural areas; and
5. To train intern doctors, nurses and other medical and paramedical staff for the purpose of rendering assistance in rural areas.

The St. John's Medical College and its Department of Community Medicine were to be mainly concerned in acting as a catalytic agency, in the formation of self-sustaining rural community health scheme, fulfilling the above objectives.

Sponsorship was by the following agencies organisations

1. MMC.
2. Coordinating Agency for Health Planning.
3. Catholic Bishops Conference of India.
4. St. John's Medical College (Dept. of Community Medicine).

Source of funds

It was estimated that a monthly budget of Rs. 2500-3000 would be required for running the Health Co-operative and financial support was

forthcoming by a joint contribution of three paise per litre of milk from the MMC and Bangalore Dairy, in a phased formula as shown in Table I below. Ultimately the MMC was to completely finance the scheme.

Table I—Contributions to the Health Co-operative.

Year	Contributions/litre	
	Milk Co-operative	Bangalore Dairy
First	1 p*	2 p
Second	2 p	1 p
Third	3 p	nil

*Paise

This budget was adequate to support a health programme, organised by a Medical Officer, Nurse, Compounder and an *Ayah*. The staff were appointed by the Health Co-operative Committee.

The Health Cooperative Committee included the following members :

Chairman, MMC.

Secretary, MMC.

Dean, St. John's Medical College, Bangalore.

Head of the Department. of Community.

Medicine, St. John's Medical College.

Director/General Manager, Bangalore Dairy.

Representative of State Health Service.

Medical Officer, Mallur Health Co-operative (Secretary).

The composition ensured integrated planning between the MMC and Health Co-operative.

The Health Co-operative got off to a good start by being inaugurated on 19 March 1973 by the Minister of Animal Husbandry. Dr. V. K. Rajkumar, a Senior House Officer in St. Martha's Hospital, joined as Resident Medical Officer in-charge of the Co-operative. This Medical Officer by dedicated work and self-sacrifice, made the Mallur Health Co-operative a successful enterprise.

Coverage, services and benefits provided

The St. John's Medical College adopted this Health Cooperative as a rural training centre for interns. Visits by specialists of other departments including specialists camps were organised. At present, four interns are attached at any one time for whom residential accommodation has been provided by the MMC on a rental basis. The interns conduct baseline

demographic surveys, immunization and school health programmes, special health projects and mass health education programmes.

The Health Co-operative Committee meets by turns, at Mallur and at St. John's Medical College, to discuss progress and plan for the future.

The health team comprising Dr. Rajkumar, Miss Maria and interns under the technical supervision of department of Community Medicine has made good contact with the villagers and a comprehensive health care programme has been introduced. The community of Mallur and other member villages with a population of 3,000, actively participate in all programmes. They have no unreasonable expectations or demands, as the health project is their own contribution. This is a basic difference between Health Centres organised through Co-operatives and governmental agencies. The leaders are actively involved in the planning and organisation as the Chairman, MMC is the Chairman of the Health Cooperative Committee and the Secretary MMC is its member. Paramedical workers are drawn from the village community and trained for community health work. The young Farmers Association actively assists in many of the health programmes. They help interns in their surveys, programmes of immunization and environmental sanitation, including chlorination of wells and construction of sanitary latrines. They also organise the physical arrangements for the mass health education programmes. The *Mahila Mandal* under the dynamic guidance of Mrs Rajkumar, runs a nursery school and acts as a forum where health education, applied nutrition programmes and mothercraft are taught to the womenfolk of the village.

The health team and interns organise the following services with community participation :

Personal services

1. Curative Clinic (daily outpatients).
2. Maternity and child health services :
   (i) antenatal care,
   (ii) midwifery (domiciliary),
   (iii) postnatal care, and
   (iv) under five clinics (domiciliary).
3. School health services for village schools.
4. Immunization programmes for smallpox, triple antigen, tetanus toxoid, BCG, typhoid and cholera.
5. Tuberculosis (TB) and Leprosy—case detection, treatment and follow-up.

6. Motivation for family planning.
7. Specialist camps at Mallur (periodical visits by St. Martha's Hospital specialists).
8. Hospital referrals.
9. Family record maintenance.

Community services

1. Protection of well water supplies by chlorination.
2. Popularisation and construction of sanitary latrines, and soakage pits and providing advice on environmental sanitation.
3. Collection of health data through periodical surveys.
4. Coordination and cooperation with government health personnel in national health programme activities.
5. Health education at personal, group and village levels.
6. Nutrition education and nutrition supplementation programmes.

Members of the Milk Co-operative and their families are entitled to all the above mentioned services free of cost. Non-members coming from other surrounding villages pay for drugs/dressings and minor surgery. All preventive and promotive work are given free to all categories. Table II shows the number of member and non-member families in each village.

Table II—Number of member and non-member families in each village.

Village	Families		
	Member	Non-member	Total
Mallur	188	202	390
Muthur	63	124	187
Kachahalli	30	21	51
Bhaterenahalli	17	14	31
Harrulunagenahalli	6	18	24
	304	379	683
	45 per cent	55.5 per cent	

Personnel, facilities, resources and mode of payment for personnal

The Health Co-operative in November 1973 was joined by another dedicated worker, Maria, an Italian Public Health Nurse. She with her companion Cathy, a volunteer from Canada, looked after the maternal and child health work.

Within five months of starting the project (August 1973), the cost of fodder went up and milk production of the Milk Co-operative fell as some

members began to sell out on higher rates. The MMC took a decision, much to the discomfiture of the Government Dairy Authorities, to sell directly to private parties in Bangalore, who offered better prices. The Govt. Dairy, therefore, stopped its contribution of two paise per litre of milk as health subsidy, and the Health Co-operative was in a critical situation. It is at this stage a momentous decision was taken by the responsible village leaders who were more than convinced of the positive role of the Health Centre and its staff in improving the health status of the people in Mallur and other villages. The Milk Co-operative was doing well and decided to contribute five paise per litre of milk for health and took over financial responsibility for running the Health Centre. This financial strategy on the part of village leaders resulted in the project becoming a viable unit. The Milk Co-operative has borne the entire recurring costs of the health project ever since, and Table III gives the Income/Expenditure position for the period July 1974 to June 1975.

Table III—Recurring Costs–Year–July 1974 to June 1975.

Total milk production	6,27,898 litres
Income estimated at five paise/litre	Rs. 31,394.90
Actual income received from MMC	Rs. 33,100.00
Total expenditure for the year	Rs. 33,790.74

Present position : Salaries :

At present the Milk Co-operative is supplying about 2000 litres of milk per day to Bangalore. Each member is now contributing six paise per litre of milk a day. The contribution towards the Health Centre is Rs. 3,600.00 per month.

The actual expenditure per month is indicated below :

Salaries (Medical Officer, Clerk, Compounder, A.N.M. and *Ayah*)	—Rs. 1,600.00
Drugs	—Rs. 1,500.00
Rent and electricity	—Rs. 200.00
Miscellaneous	—Rs. 250.00
Total	—Rs. 3,500.00

In case the actual expenditure exceeds this amount, the extra expenditure is met by the Milk Co-operative. The staff of the Health Centre consist of a Medical Officer, an ANM, a compounder, an Ayah and a clerk.

In addition, members of the Youth Association, Women's Association and Village *Panchayat* participate in the activities of the Health Centre.

Although the Mallur Health Project is mainly financed by the Mallur Milk Co-operative, it also receives help and technical direction from St. John's Medical College and the Government Health Services. These inputs are shown in Table IV.

Table IV—Inputs from other agencies/organisations.

Source	Capital	Recurring
1. Mallur Milk Cooperative	Buildings, furniture, refrigerator health education material	Salaries, rent/electricity, drugs, general stores and petrol.
2. St. John's Medical College	Physicians and midwifery kit, minor surgical equipment, laboratory equipment, motor cycle (on loan through UNICEF)	Interns services, specialist services and rent for interns quarters.
3. Government Health Services	Nil	Vaccines, vitamin A, Iron and folic acid supplement, family planning devices, surveillance of communicable diseases (through PHC, Sidlaghatta), health education films (through Health Education Department of Director of Health Services).

Factors affecting quality of services, difficulties faced, methods of enforcement of control and evaluation

The experience over the last two and a half years has shown that :

(i) A health function can be grafted on to an economic co-operative;

(ii) A sound cooperative such as MMC can support substantially the recurring costs of a health programme;

(iii) Tagging on of a health function to a cooperative benefits not only the members and their families but also the non-members who get indirect benefits of professional services, preventive and promotive programmes.

The Department of Community Medicine and its staff were mainly concerned in acting as a catalytic agent, in the formation of a self-sustaining rural community health scheme. An experiment was embarked upon and the Mallur Project is this experiment. A total health care programme can be effectively delivered through a cooperative in rural areas. The

MMC is even contemplating construction of a 15 bedded hospital at Mallur, with the help of government and its own funds.

Further, the Health Centre with its working philosophy, has indirectly helped the Department of Community Medicine to conceptualise a primary health care system for training of future physicians, so that they play their rightful role in a contemporary society.

The health team and interns have played an important role in the development of the village in general and health aspects in particular. Attemps are being made to increase the membership of the milk cooperative by purchase of more cows and increasing enrolment. Other economic activities such as development of village/cottage industries and handicrafts and ensuring sale of products, are contemplated. It is fully realised that in the planning of such self-supporting programmes, the health team has to be actively supported by other members who will attend to the social and economic development problems of the community. Success or failure would depend on tackling the financial side efficiently.

The quality of promotive and curative services would have to be improved. Simpler skills, cheaper drugs and intermediate technology have to be introduced to suit rural conditions. A drive to improve the education of the people, including health education, is to be attempted through the use of Village Level Workers. Their training programme is being organised. Whether there has been an improvement in the morbidity and mortality statistics at Mallur, subsequent to the introduction of these cooperatives in comparison with other areas in the vicinity, needs study and this has been taken up as a health project.

The question of introducing such self-sustaining Co-operative Schemes to other areas around Bangalore is under active consideration. These are challenges that have to be met in rural India and it is hoped that with the cooperation and participation that are readily forthcoming from the simple rural folk, the economic and health projects will meet with success.

Conclusion

A good and well informed faculty with modern concepts of medical education, has a capacity for extensive research in the organisation and delivery of health services through experiment, models and pilot projects. Medical educators in general, and faculty staff of departments of Community Medicine in particular, must assume their share of responsibility for meeting the quantitative as well as qualitative needs of the people and must be concerned not only with the basic mission of the university or government which is learning, but also actively help the people of a locality or region in organising and running their own primary health care services.

For establishing an effective and viable primary health care system, the cooperation of the local community must be ensured. In fact, the people should be adequately motivated, involved in decision making and actively participate in health programmes, so that ultimately it becomes their own "peoples programme". Local resources such as cooperatives, agriculture, manpower, buildings and most important of all local leadership, should be used to solve and finance the local health programmes. It is desirable that the primary health care system should be a self-sufficient fiscal entity. Community priorities are more likely to be met if the people themselves raise and spend the resources required. A "total health" approach is essential, promotional, preventive and curative care need to be completely integrated.

MINI HEALTH CENTRES PROJECT OF THE VOLUNTARY HEALTH SERVICES MEDICAL CENTRE, MADRAS

K. S. SANJIVI*

It is not necessary to dwell at any length on the lack of sufficient organisations for medical relief, education and research throughout the country. Since independence various efforts have been made to augment such institutions. A group of senior consultants in medicine and its specialities got together in 1958 to consider the best methods by which such facilities can be provided. When the Voluntary Health Services (VHS) was registered as a non-profit society, the organisation straightway started to work on the following important concepts.

The first concept of the society is that in a country with so many preventible diseases and deaths, the emphasis should be on prevention and serious illness to the comparative exclusion of minor or day-to-day illness.

The second concept is that the family should be the unit for medical care and that every family should be attached to a combined public health and curative centre and should learn about all diseases and their prevention from the same Social Worker, Health Visitor or Public Health Nurse attached to the Medical Centre to which the family knows it belongs.

The third concept is that community participation in the centre should be ensured by each family in the low income group enrolling itself as a subscriber to the Medical Aid Plan. Even those in the higher income groups should register themselves with a family physician who will keep records of every member in the family.

The fourth concept is that a well-equipped Medical centre with a staff of senior specialists should undertake certain items of medical education and medical research.

The fifth and last concept is to use the centre for field research in various experiments in the organisation of medical care, in public co-operation and health education.

To achieve the objectives of providing the maximum health care to maximum number of persons irrespective of their economic background or geographical domicile various projects were put into effect.

*Dr. K. S. Sanjivi, Director of Projects, The Voluntary Health Services Medical Centre, Adyar, Madras (Tamil Nadu).

These briefly were :

(1) A Medical Aid Plan for persons earning below Rs. 500/- per month, where on payment of 0.5 per cent of the actual income of the family, they get a range of preventive services and all curative services when the need arises. For those earning more than Rs. 100/- per month, there will be an additional levy of charges based on the service. There will be no subsequent charges whatever for those earning less than Rs. 100/-.

(2) The Mini Health Centre Project which will be described fully later on.

(3) The Schemes for students health.

(4) The establishment of a modern community General Hospital, well-equipped and well-staffed with a proper referral system.

(5) Ancillary services to the hospital, such as, well-equipped laboratories, X-ray and blood transfusion services.

(6) An urban family planning welfare centre.

(7) A Food Handlers Scheme for the proper examination, certification and education of food handlers working in hostels, hotels and other establishments.

(8) A Tuberculosis Project with an emphasis on domiciliary treatment and the reduction of the defaulters rate.

(9) A College of Medical Technology offering diploma courses to non-medical graduates in Medical Laboratory Technology, Nutrition and Dietetics and Health and Hospital Administration.

(10) An institute of General Practice for the continued education of the general practitioner, through clinical demonstrations, lectures and special courses.

(11) The training of nurse aids.

(12) Health education of the public in various ways.

(13) Orientation for Health and Hospital volunteers.

(14) Research : Study of concepts and drugs in indigenous medicine with modern tools, operational research in patterns for the delivery of health care and *ad-hoc* studies in various departments including medical cost-accounting.

It was only after five years of stabilisation of the activities at the main medical centre on the outskirts of the city of Madras that the Mini Health Centre Project in St. Thomas Mount Community Development Block in the neighbouring Chingleput district was launched. The main features of this project are as follows :

A Mini Health Centre is a unit catering to the health needs of 1000 families or 5,000 population resident in a local area of rural or urban setting. Chief objectives of the programme are : (i) comprehensive, (ii) continuous, (iii) co-operative, (iv) community, and (v) care.

Comprehensive care will include every type of preventive and curative service that can reasonably be expected to be done with minimum facilities, e.g. maintenance of health records of each member of the family, nutritional assessment, maternity and child welfare services, family planning advice and procedures, and medical care. The medical care is made comprehensive by a good referral system and liaison with a hospital.

The services should be continuous on a permanent basis and not on the concept of mobility sporadic visits, camps or drives.

The project is 'co-operative' in that, it is really a programme organised by the community itself to which doctors and their auxiliaries provide technical help. This is a very important concept that it is the community's own programme and not a paternalistic condescending gesture of 'better off' urban dwellers to their inferiors. Local Action Committees have been formed with this emphasis. There is no better method of ensuring this co-operation than the imposition of a token contribution. This has been fixed at Rs. 0.50 per family per month, when the income is less than Rs. 100/- per month, Re. 1/- per month per family, when the monthly income is Rs. 100 to Rs. 199/- and actual 0.5 per cent of the annual income for those earning Rs. 200/- and more. The subscription is collected in quarterly or annual instalments.

The staffing pattern for the Mini Health Centre is as follows :

1. A part-time medical graduate who lives in the neighbouring urban or semi-urban town and travels to the field for not more than seven miles from his residence and gives not more than three hours a day for this programme. At the very outset it should be accepted that a considerable volume of medical care can be provided by persons other than the fully qualified medical man. But a medical man must, however, be available for a brief period every day and what is more important he should have the necessary training and outlook to function as the leader of a health team. This lack of orientation and motivation on the part of the new graduate is the most urgent problem to be tackled.
2. An Auxiliary Nurse Midwife (ANM) who will ideally man a health post for every 2,500 population (but now a 5,000 population) will be the most peripheral health worker and in as much

as she has had 2½ years of training in nursing and midwifery, she can be trusted to function in an effective manner.

3. Helping the doctor and supervising the ANMs in two Mini Health Centres will be the other categories of paramedical workers such as a Public Health Nurse (PHN) or a Lady Health Visitor (LHV), a Nutrition Worker (NW), a Laboratory Technician (LT) and Health Administration Assistant (HAA). The doctor conducts a clinic on Mondays, Wednesdays and Fridays in Mini-centre 'A' and on Tuesdays, Thursdays and Saturdays in Mini-centre 'B' thus looking after 10,000 population.

Detailed job specifications have been worked out for each category of worker in the project. As mentioned earlier, complete records are maintained with regard to the health status of every member of every family in the area. The liaison with a referral hospital within a reasonable distance say 25 km., is extremely important.

On the two years experience with the functioning of 16 rural Mini Health Centres to cover an entire *Panchayat* block and two urban centres in slum areas, the benefits derived from this project may be highlighted as follows :

1. A permanent peripheral service will take care of the community on a womb-to-tomb basis.
2. The medical literature of the world contains reports of 'surveys' conducted in several countries to obtain data regarding the prevalence and other features of different diseases. What is the set-up required to carry these out and of what permanent value are such surveys ? They only reflect the position as on the dates of the survey. Instead, the continuous recording of events from birth to death in the Mini Health Centre will provide extremely valuable data on epidemiological problems in their widest sense.
3. In the past when immunization of preschool children was attempted on the 'jeep' approach, the percentage of children having all three doses of triple vaccine or polio vaccine compared with the number taking the first dose was uniformly unsatisfactory. But in this programme, where immunization is part of a continuous service to a local population, practically 100 per cent coverage has been achieved for all the three doses (now triple vaccine reduced to two doses only, the third being a booster at the time of school entry).
4. The fact that considerable amount of medical services can be rendered through paramedical workers with only a part-time

medical officer as the leader of the team, is a valuable lesson for workers in India. The need, therefore, is to multiply enormously such medical auxiliaries.

5. With the paramedical workers actually visiting the homes of the families under their charge, the temptation to give a lower income is much reduced.

6. Considerable morbidity data have been collected. It is significant that over 90 per cent of all persons examined on a house to house basis have been in need of some help or other from a health worker although they did not all have subjective symptoms of illness. Preventive procedures are counted in addition to curative steps.

7. The *Panchayat* leader, school mistress and similar permanent residents in the area have been given an orientation programme 'Medical-First Information Report (FIR)'. The Medical FIR has brought to the notice several health problems in a rural community. Indeed, a lay person who has attended the orientation course brought a man aged 42 as a case of heart attack and electro-cardio-gram (ECG), confirmed his provisional diagnosis.

At the very outset a project committee with representatives of the Government and the VHS under the Chairmanship of the District Collector, was formed to co-ordinate the activities.

Still later it was realised that the services stopping at the level of the Mini Health Centre did not achieve the expected measure of success by way of the fulfilment of the various targets in health care. About the same time studies carried out by the National Institute of Health Administration and Education (NIHAE) and the community health department of the Jawaharlal Nehru University (JNU) brought out the fact that the health team working at the Primary Health Centres (PHCs) achieved hardly 40 per cent of the targets due mainly to two reasons : 1. the apathy of the workers in carrying out the duties expected of them, and 2. the gap between the sub-centre level worker, granting he or she was there and doing their work and the community far beyond the sub-centre in the peripheral villages. There was also the problem of the community itself as the consumer of the services being properly educated about the availability of modern health care and their accessibility to the health personnel. This gap can only be filled by a person permanently residing in the community. It had been experimented earlier with a 14 hours' syllabus called the 'medical first information report' to educate the village leaders on community health. Although the 'students' took much interest, there were several problems with regard to transport, accommodation and cost of

running such a programme which involved the taking of the village leaders to the medical centre.

The decision was taken to organise Health Posts manned by lay first aiders for 500 to 1000 population away from the location of the Mini Health Centre. Indeed it was an effort to evolve a model which could satisfy the World Health Organization's (WHO's) plan "to support a universal medical care system to be made available to all mankind". The main features of the health posts project are :

In Appendix I is shown the layers and gradients of health care. The Health posts function at the extreme periphery, each post ideally serving a population of 500 and not more than 1000. The health posts are manned by lay first aiders (LFA) who have been brought under the heading of para-professional workers in the Shrivastav Committee Report. They are given four weeks training, five days a week and four hours a day at the medical centre and then a continuous in-service training and supervision. A detailed book of instructions for the lay first aiders has been prepared in English and in Tamil. The LFA functions as a first aider to the persons in the immediate neighbourhood and what is more important, as a first informant of the happenings in the village to the health team. She also helps the health team on their periodic visits to the particular village by rounding up the children in need of immunisation, the pregnant women in need of antenatal care, the eligible couples for family planning and generally the persons "at risk". She is paid Rs. 50/- a month for keeping the health post and another Rs. 2.50 on the special visit days of the health team. On these days she is also permitted to employ two additional helpers. In the programme it is insisted that the lay first aiders be women with a basic general education and permanently resident in the village. This programme is being restricted to women in the firm belief that they will obey the instructions and not transgress their limitations and the possibility that the provision of more opportunities for part-time employment of rural women may lead to identifying more, perhaps better, community leaders.

It is obvious that a single small institution such as the one described cannot do very much to physically carry health care to vast areas. The best which can be done is to study a model remembering that a prototype of any health service can only be evolved in stages as follows :

Prototype of an area Health Service

A Service begun	→ Its usage	→ Its effectiveness
A better prototype	→ Its quality	→ Its feasibility
Feed-back	→ Its cost	→ Its reproducibility.

The coverage, the services and benefits provided, have all been dealt with in detail in earlier paragraphs and also shown in Appendix II. Next is to discuss the problem of resources and the mode of payment for personnel. Here, it is strongly felt that no country in the world can afford to provide comprehensive community health service on a zero price basis. Any student of the United Kingdoms' National Health Service (NHS) will easily appreciate this. There is no need to stress the fact that the NHS in the United Kingdom is finding it difficult to meet the ever-rising annual costs; a sum of more than £ 3,200 million being spent in an area one fourteenth that of India, for a population of one tenth that of India with one language, one religion and one system of medicine. This amount converted into rupees will almost be 75 per cent of the total budget of the Central Government including plan schemes.

Therefore, it is felt that the community must make a provision for health care just as it is now doing for the shelter, food, clothing, education and entertainment of its family members. It is also felt that obtaining 0.5 per cent of the annual income from every family and paying it into a single chest which is called the Community Health Delivery Corporation (COHEDEC) can take care of the entire community health services provided the delivery of the services is through a single channel of the Mini Health Centre and its health posts and covers the urban and rural population and the rich and the poor. The 0.5 per cent of the national income is well above the total cost of a national community health programme on the basis that such a programme costs Rs. 3.60 per annum per head of population.

The factors affecting the quality of services and difficulties faced can be summarised as follows :

1. The difficulties in obtaining the community's contribution continuously and regularly due to there being several methods for the delivery of health care to cover different groups, such as Central and State Government servants, industrial labour, etc. Nothing can be achieved until the governments make up their mind clearly and firmly about the imposition of this health cess of 0.5 per cent of the annual income. The author is afraid that so far as democracy has meant discussions till doomsday and deferring decisions indefinitely. The implementation gap between what is known as the ideal and its execution must be bridged with a sense of urgency and on a revolutionary breakthrough.
2. There is conviction that almost every member of the community in the villages and slums is in need of one or other, curative or preventive service from the health team and also that 90 per cent

of the problems can be solved at the doorstep of the family, hardly 10 per cent would require referral to a hospital for diagnosis or treatment.

3. The quality of services not being as good as wanted for the reasons that the paramedical workers in permanent government service have not set a good example and the lack of security among project workers, being an *ad hoc* experimental project.
4. The project however, is capable of being easily reproduced over the entire country provided that the sharing of the costs (i.e. Rs. 18,000/- for 1000 families or 5,000 population) is done equally on a 33 per cent basis by the community, the State Government and the Central Government.

It is worth mentioning that at two recent seminars on integrated approaches to rural development attended by experts in various fields, the participants commended the scheme for adoption throughout the country.

The recent decisions of the Central Government to provide consumption loans through rural banks should make it quite easy to obtain the community's contribution. Also the anticipated earning capacity in rural areas by the institution of several development programmes will enable the easy collection of the community's share.

In order to enforce better control over the workers, the project authorities are in touch with a team of management experts to evolve a reliable information system of the work of the paramedical and paraprofessional workers. The scheme has been evaluated by the economic analysis and research department of the Government of Tamil Nadu. It is understood that the evaluation report is quite favourable, the evaluation team having found the work in most areas being satisfactory and in some areas very good and noteworthy.

Arising out of the above discussion, the following conclusions and categorical steps for immediate implementation are drawn :

1. The sub-centres for 10,000 population in the present scheme of Block Primary Health Centre (PHC) just do not work.
2. A population of 5,000 should be served by a Mini Health Centre—as contemplated in the scheme for Multi-purpose Workers and the Voluntary Health Services, Madras.
3. Government cannot implement the entire scheme, at its own cost or through its own workers. The involvement of voluntary agencies will be both essential and salutary.
4. About 20,000 population in about 5 km radius in the immediate vicinity of a PHC may be left to be taken care of by the PHC. Under the new set up, PHC's functions will be as follows :

Run four Mini Health Centres in its area of 20,000 population.

Liaison with the Mini Health Centre/Subcentres in the entire block.

(i) Periodic visits of inspection,

(ii) Obtaining morbidity and other data of performance, and

(iii) Supplying drugs etc. for prevention and family planning e.g. triple vaccine, Vitamin A, iron, folic acid and condoms.

Peripheral sub-centres/Mini Health Centre will be run entirely by their own staff. The Medical Officer-in-charge of a PHC must be a selection grade Civil Assistant Surgeon—not a raw graduate.

5. Sub-centres (10,000 population) already determined by the government to be identified. Health Department to insist on dispersing the paramedical workers (about 44) now available at the PHC between the sub-centres in such a way that at least a male and a female worker take residence at each sub-centre level. The others will be supervisory over the peripheral centres, besides helping at the PHC and its own Mini Health Centres.

6. Extra input of one male and one female worker and LFAs to be provided in more peripheral areas by Mini Centres operated by voluntary health agency. Clear identification of areas and families to be effected to avoid overlapping. This will be done by the Block Development Officer, District Health Officer, and Medical Officer-in-charge of PHC.

7. The expenditure of the Mini Health Centre includes three health posts manned by LFAs in each unit of 5,000 population, thus ensuring immediate implementation of the Shrivastav Committee's report.

8. Provision is also made for a part-time doctor, who will be the leader of the health team and runs the clinic on three days a week at each sub-centre/Mini Health Centre level.

9. The cost per head per annum will be Rs. 3.60 i.e. for 5,000 population Rs. 18,000/-. The budget should not exceed Rs. 18,000/- per annum and will be under the following broad headings (with certain reallocations where needed).

Doctor	Rs. 250 × 12	Rs. 3,000.00
Female worker (Nurse/A.N.M.)	Rs. 300 × 12	Rs. 3,600.00
Male worker	Rs. 300 × 12	Rs. 3,600.00
Drugs		Rs. 3,000.00

Health Posts 3 × 800	Rs. 2,400.00
Stationery, Contingencies, travelling allowance (TA) for supervision, specialist visits etc.	Rs. 2,400.00
	Rs. 18,000.00

10. The Community will provide Rs. 6,000/-. 33 per cent each from the State Government and the Central Government must be made available. This can be done by the State and Central Governments reallocating their current expenses on health and family planning without any significant extra expenditure. The Community will provide free the space and minimum furniture for the Mini Health Centre. The Health Post will be in the residence of the LFA. No expenditure will be incurred on buildings.

11. Every family in the area will be included in the programme and given an identity card. The sum of Rs. 6/- on behalf of those really indigent will be paid by the voluntary agency sponsoring the Mini Health Centre.

12. When an agency sponsoring a Mini Health Centre deposits in the nearest bank the sum of Rs. 3,000/- immediately, an advance of a similar amount of Rs. 3,000/- each from the State and Central Governments may be made and sent directly to the bank.

13. It is not likely that Rs. 6,000/- per annum for 1000 families will be forthcoming straightway. The State Government and the Central Government grants can be limited to the actual amount raised in the area covering the Mini Centre. Further grants to be payable in April and October each year will therefore be adjusted to equalise the Community's contribution. This will mean that the facilities in certain areas will be limited only to health posts and LFAs and perhaps an ANM, but in the other areas the ideal input of a Mini Health Centre will be achieved depending on the contributions collected. This will be a visible incentive for local communities to compare themselves with the neighbouring areas and produce larger amounts each year till the target of Rs. 6,000 per annum is reached. A definite impact on rural health would have been achieved without further delay and a model set for replication in other areas.

14. The author wishes to conclude with one brief quotation from the Editor of WHO's recent publication "Health by the people" :

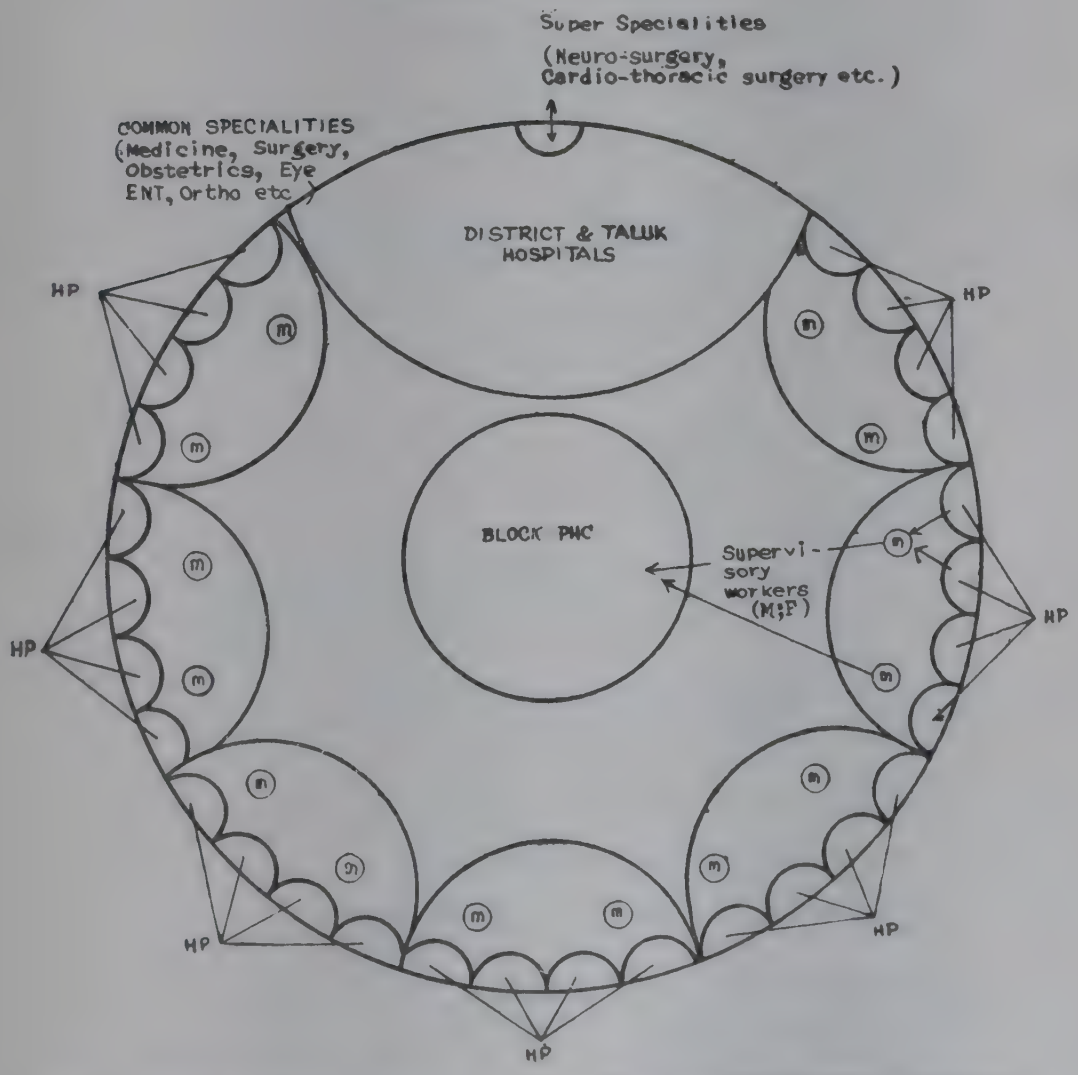
"A national political decision to change is imperative for success. The decision for national change in China, Cuba and Tanzania has been more radical than the local community developments in India and Indonesia".

This indeed is the crux of the problem. Until the national political decision for a radical change ensuring the more equitable allocation of national health funds between all segments of the population—urban and rural is taken, it is just futile to waste time and energy at seminars and symposia.

APPENDIX I

HEALTH CARE :

Layeys and Gradients



m : Mini Health Centres or Sub-Centres (5,000 Population)

HP : Health Posts (1,000 Population)

APPENDIX II

1. Census of the area (a) No. of families
   (b) No. of persons
2. No. of families enrolled in the Project
   (a) per cent of the total census
3. No. of persons among enrolled families
   (a) Enumerated
   (b) Examined
   (c) Per cent
4. No. of persons who required services at first examination
   (a) as a per cent of column 3 (ii)
5. No. of antenatal cases registered
6. No. of domiciliary deliveries conducted
7. No. of eligible couples in the area
8. No. of eligible couples practising
   (a) Temporary methods
   (b) Permanent methods
9. No. of cases requiring nutritional supplements
   Vitamins A., B. complex, iron, calories and proteins
10. No. of children protected with
    (a) Triple antigen
    (b) Oral polio vaccine
    (c) BCG and others
11. No. of Communicable Diseases under treatment
    TB Leprosy Scabies Venereal diseases Others
12. Total No. of both new and old patients who received medical attention
13. No. of cases referred to the hospital
14. No. of laboratory investigations done
15. Specialist clinics : No. of cases attended to
    (a) Obstetric and gynaec clinics
    (b) Paediatric clinics
    (c) Surgical clinics
16. No. of nutrition demonstrations conducted.

Community Health Care

ALTERNATIVES TO HEALTH CARE SYSTEMS

L. RAMACHANDRAN*

Background

With the advances made in the field of medicine and the growth of knowledge on the causation of diseases, the medical man of today is better situated to take action to prevent illness and promote health however, the concepts of the positive health, preventive medicine and promotion of health are known only to a few that have studied them professionally and not by the vast majority of those that have to participate in health programmes. There is, therefore, a huge gap between acquisition of technical know-how and its application to the community for which it is meant. In developing countries the needs are, by and large, felt and identified by the planners and administrators rather than by the people themselves and hence there is a gross lack of utilisation of whatever services are made available, whether curative or preventive. Lack of awareness of how to lead a healthy life is probably the biggest reason for the lack of utilisation of provided facilities ; but there are various other factors like geographical inaccessibility, dissatisfaction, low priority of health as against the more pressing needs of poverty, and threshold of endurance of pain and suffering etc. There is a constant and growing realisation, therefore, to improve on the existing system of delivery of health care and to try out new approaches.

With regard to developing countries there is one inevitable step in the methodology of delivery of health care that cannot be dispensed with for a long time to come. Till such time as people realise for themselves the need for living a healthy life and adopt the necessary practices for the same, the delivery of the programmes and services to the community has to be considered as an indispensable activity of the organization responsible for health care of the community.

Because of the appalling poverty, widespread malnutrition and low standards of living of a great majority of the people in the country, a good health care delivery system in the present juncture has to fulfil the following conditions.

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*Dr. L. Ramachandran. Director, the Gandhigram Institute of Rural Health and Family Planning, Ambathurai Madurai district (Tamil Nadu).

1. Adequacy of coverage.
2. Adequacy of frequency of contacts/care according to required or worked out norms under each programme activity.
3. Intensity of level of care (including selectivity of approach and appropriateness of person giving a particular service).
4. Proper emphasis on preventive and promotive services.
5. Continuity of care for prompt and early detection of deficiencies and diseases.
6. Close participation of the community.

Existing system of delivery of health care and its shortcomings

No country situated at a similar level of economic development has done so much in the field of health as India. Health was made a part of total socio-economic development and included in the five year plans. This is more evident in the package "Minimum needs Programme" suggested in the Fifth Five year Plan.

The country has made tremendous progress in many areas but not to the desired extent. Epidemics have been replaced by dysentries, diarrhoeas and respiratory diseases which are now the immediate causes of over 50 per cent of deaths. Malnutrition remains a significant "behind the scene" cause of morbidity and mortality. There is considerable inter-state and inter-group variations as also rural and urban differentials in morbidity and mortality. Review of expenditure in the last five year plan shows that India has been spending one third of its health budget on water supply and sanitation programmes and the budget for family planning is substantially increasing from plan to plan.

Review of the history of health conditions of western countries indicates that improvement of health situation was presaged by improved environmental sanitation, and improved standard of life. This was emphasised by WHO-UNICEF studies and in Dr. Newell's book "Health by the People."

Many health problems have their roots in various aspects of community life and cannot be influenced by health interventions alone. Non health interventions may be an important, and in some cases the only way, of raising the level of health of a population. Amongst the non-medical interventions the improvement of sanitation (environment and personal) provision of food, education (need not be formal), assistance in improving productivity and a host of other factors may be mentioned. Non-health interventions (even without an increase in activity in the health sector) can improve the general health status to a certain level. On the

other hand, health interventions on their own have also been able to improve the level of health of the people as reflected by decreased morbidity and infant mortality rate etc. The two, however, have been able to do so independently only up to a certain point. For optimal results a reasonable combination of both is essential.

Unlike a developed country, a developing country will have to put greater emphasis on preventive medicine, environmental and personal hygiene and widest population and geographical coverage, people's involvement and on providing services near homes. Delivery of these services will need attention to organization—careful structuring of the referral system so that each successive health level becomes a link in the regular referral system—and to providing opportunities for training and retraining.

It is worthwhile recapitulating in the present context the existing pattern of delivery of health services in the country and to take note of the shortcomings so that alternative approaches can aim at filling the gap and improving the efficiency and effectiveness of the system with the existing resources.

Recent studies (Functional analysis of primary health centres at Narangawal and the Rohtak study under the auspices of the National Institute of Health Administration and Education) have brought out the following :

1. Five per cent of the population in close proximity of the primary health centre (PHC) receives medical care from the primary health centre, about 10 per cent from registered medical practitioners and the rest depend only on unlicenced indigenous medical practitioners. This means very poor coverage of medical care facilities through the PHCs.
2. Underutilisation of available working hours of the medical officers as well as the paramedical staff in PHC.
3. Unrealistic and unmanageable area and population for front-line workers.
4. Insufficient orientation and training of PHC staff and lack of clear cut job descriptions resulting in ignorance of their duties, the objectives of the programmes and the methods and techniques to be adopted.
5. Unsystematic and irregular work schedules.
6. Unsuitable working hours for field work, particularly from the point of view of the community.
7. Irregular and scanty supervision.

8. Cumbersome and difficult record keeping resulting in undependable data at the periphery.
9. Very thin coverage of maternal and child health (MCH) services. Apart from insufficient antenatal and postnatal care, almost 80 per cent of the deliveries take place in the hands of local indigenous *dais* and not by skilled persons.
10. Improper management of stores and equipment leading to unwarranted wastage and shortages (poor material management).
11. Dichotomy of administrative control and lack of integration of the programmes.

It was envisaged and desired that the PHC doctors should plan and organise weekly visits to sub-centres and conduct clinics. But due to various reasons, of which shortage of petrol and non-availability of vehicles predominate, a regular system of sub-centre visits by doctors is rarely observed.

For more than two decades there has been great stress on the need for health education and involvement of the community but this has not been followed by a majority of the PHC team. Even in the family planning programme with its highest priority, the frequency of contacts with eligible couples by the field worker is about once in three or four months and studies have shown that many couples have not yet been told about the methods of conception. It is well known that, even after nearly 15 years of this programme on the ground, the enlistment of couples for regular supply of condoms by the workers is made only by an exceptionally few workers who have understood the programme properly and have systematized their visit in such a way as to meet the contraceptive users regularly.

Alternative approaches

The present system of having a wide network of PHCs and sub-centres has been evolved after considerable thought. It has its own advantages but has not served its purpose fully because of various constraints. Alternative approaches should, therefore, be tried to supplement and support the existing pattern rather than replace it. It is fully recognized that administrative functions like unified administrative and the technical control, proper orientation of staff, clear cut job descriptions, adequate training, proper supervision, simplified and accurate record keeping etc. are essential for improving the efficiency of these services. These factors have no doubt to be strengthened.

Alternatives of health care can be tried out in the levels of care, location of facilities, transportation and methodology of work, training of workers and greater involvement of people in their own health care.

Family health care

Primary health care is front line health care. It consists of all the services that can be provided on an ambulatory basis close to where people live or work. This care should primarily aim at health maintenance and should be adequate for 80 to 90 per cent of the problems brought to the first contact services in the form of complaints. In the present system of rural health services through the PHCs primary health care is provided by the most peripheral health workers. However, they are utilised mostly for preventive programmes, and the workers have not been trained and equipped or empowered to undertake the treatment of minor ailments. Due to an unwieldy area and population for their operational coverage, the frequency of their visits to the same family is not more than once a month and they are not in a position to be of any immediate service to the people with regard to their various disease problems. It may be realised that for the PHC the family level contact and care are most essential not only for the prevention of disease and health maintenance but to inculcate the spirit of self-help in the individual and his family through health education. Moreover, the existing paramedical worker at the periphery does not actually belong to the community and/or does she live in the community. He/she, therefore, lacks credibility and can not be readily available in times of emergency. It has been long argued whether ailments could be at all treated by anyone other than a qualified medical practitioner. There has been certain reservation from some quarters that the quality of service will be diluted and that the art and science of diagnosing and treating can be handled best only by those trained specifically for this purpose in recognised medical schools or colleges. Experience has shown that there is a need for a broad based network and linkage of primary health care with the existing health services radiating from the health centres. There have been various experiences and experiments inside and outside the community which have shown that the use of local persons from the rural community acting as change agents and links between the community and the health centre has proved effective enough in changing the behaviour of the people and in making available to them a kind of readily accessible service for each and every family. Regardless of what designation may be given to that person, an immediate alternative approach to widen the health care delivery system and its coverage is to identify and select in consultation with the rural people a front-line community health worker from the community itself to be trained as a community health guide. This approach will ensure :

1. A small group of families under the close guidance and supervision of the person.
2. Regular frequency of contacts, weekly if not fornightly, to each and every family.
3. Prompt detection of illness and advice for its treatment.
4. First-aid treatment and treatment of minor ailments.
5. Continuing education among these families for adoption of health practices and utilisation of the nearest health facilities.
6. To act as agents of the health centre in referring cases or taking cases to the sub-centre of PHC.

Along with this, it is absolutely necessary to form village health committees, with whose cooperation and acceptance the community health worker will be initiated into action and supported in his day-to-day activities and also watched. The village can be encouraged to be self-supporting in the case of drugs and equipment for the day-to-day treatment of minor ailments and first-aid.

A system of cooperative health insurance or at least a monthly subscription from each family can be organised by the village health committee for the maintenance of primary health care for the community. In this context it is also necessary to select and train primary school teachers to take the role of community health workers. They have a recognised status in the community and with the parent teacher relationship they have great scope and potential for this health function.

Another alternative is with regard to the methodology of working of the existing paramedical staff. Actual experience from the implementation of the various single purpose programmes and studies conducted now and then have clearly indicated the need for a change of working methodology to the multi-purpose health worker's approach. This has already been recognised as an immediate step for integration of the programmes and also for making the work schedule worthwhile, feasible and interesting for the individual workers. It is laudable that the government have also accepted the need for training these multi-purpose health workers in the treatment of minor ailments and are contemplating giving them the facilities for doing this curative aspect of the work. This will surely go a long-way in helping the multi-purpose health worker in securing the confidence of the people and establishing a close rapport with them. Doubts have aften been raised whether this function would take away the interest and concentration of the worker from all his other activities and also whether this may lead to quackery. It has been generally found that the public health

worker is not fully acceptable in the community and often finds it difficult to get the cooperation for his health programme because he has nothing to offer, except verbal advice when minor complaints are reported to him. Moreover, since these workers belong to the department and they are going to be trained specifically to treat minor ailments and they are going to be supervised while on their job, the community will be provided a type of primary medical care which cannot be any worse in quality than what the existing quacks are providing.

With regard to maternity and child health (MCH) and family planning (FP) programmes, where it is already known that the existing Auxiliary Nurse Midwives are not able to deliver the services adequately, the training of local *dais* for proper involvement in health care should be pursued seriously and vigorously. The community should be stimulated to persuade the local *dais* to receive the training in scientific methods of antenatal and confinement care. The large number of *dais* available in the villages should be better equipped for their skilful job and should be encouraged to receive consultation and referral from the PHC and subcentre.

Location of facilities and regionalisation

Except for the Auxiliary Nurse Midwives who stay in the sub-centres, almost all the staff of the PHC stay in the main headquarters and move out for work everyday and come back to the headquarters. It is worthwhile considering a division of the PHC area among medical officers and the supervisors and shift their headquarters so that they are centrally located in their respective areas. This has been done in Karnataka State with respect to the health visitors.

In most of the states there are many types of dispensaries and small hospitals in rural areas which have only a curative service to perform. The availability of so many doctors inside the block area should be better utilised for the entire health programmes. The corresponding health staff working in those areas should be supervised by those doctors and the community visited by them instead of by the PHC doctors from a distance. If not for all the health programmes this approach will have a great advantage at least for the MCH and FP programmes because of the nearness of the doctor and the dispensary to a group of villages. Transport (in the form of jeeps and wagons) as already mentioned has been a great bugbear in all PHCs. Most of the field work for service or supervision is conveniently avoided because of no transport. The government may consider the supply of mopeds or petrol driven cycles for all the supervisory staff and also medical officers.

Referral system

Much has been talked all along about the establishment of referral system but little has been achieved.

The secondary health care available at the PHC level suffers badly at present from lack of consultation, supportive facilities etc. from the district hospitals.

For many purposes PHCs work in isolation and have to contend with their limitations in diagnostic and treatment facilities. The district and *taluk* hospitals have a number of specialists and supportive equipment and facilities but a proper linkage has not been set up so that either the specialists and the supportive services are available at the PHCs at frequent intervals or the referred cases receive prompt reception and attention at the hospital. In this context it is worthwhile considering the deployment of mobile teams of specialists and laboratory services on regular visits to PHCs. Not only will this act as a moral booster to the PHC doctors but will keep up their clinical knowledge ; in addition, the specialists will also get the opportunity to learn the stark realities in the field and will be able to guide the PHC doctors in handling cases with the minimum of facilities provided.

Tertiary medical care

Teaching and specialist hospitals will act as the apex body of diagnosis, treatment and consultation, for cases requiring highly specialized attention, and which can usually only be provided in centres specially designed for this purpose and by physicians trained in the area of specialization. In addition to responsibility for education of health care personnel, they should be responsible for providing the most highly specialized and newest technical services to all persons in the area served by several district and sub-district hospitals and their associated primary health teams. Their mission would be to improve quality of health care throughout the area.

In other words, the whole health care services should be organised on a regionalized basis in a frame of higher specialization and sophistication. This will make services available to each and every person needing the service even in the remotest part of the country.

Hours of work

Another important area in which a change is strongly indicated is the hours of work for field staff and supervisors. The health workers have to work in the community and have to suit the convenience of the people. But, as it exists now, the health workers have more or less the same hours as office going staff or in any case, they make the home visits when most of the inmates are out at work. There should be some flexibility with regard to the hours of work depending on each situation.

Supervision

While various studies have pointed out that supervision at different levels is very superficial and scanty, the type of supervision also needs a

drastic change. It is a fault finding approach now. Guidance and participation with the worker are badly needed. Even for reports and records and returns the supervisor can periodically sit with the peripheral worker and collect the information after its verification, instead of following the usual routine of reports being sent to the PHC with all mistakes and deficiencies in data.

Planning of the programmes at PHC level

The PHCs should be encouraged to get into the practice of participative management and planning of the programmes in consultation with the staff. This will give a greater sense of commitment among the workers and the planning will be more realistic. In fact, the planning should be made in collaboration with the medical officers of dispensaries etc. in the block, so that their involvement is also fully ensured and responsibility can be shared equally areawise.

Planning of the programme at all levels

Rational planning, based not only on medical but also on social needs, has to be made at every level from the lowest to the state and central levels. Locally the people's representative should be involved in planning.

Community participation

Whatever may be the approach devised for providing health care, the acceptance and participation of the community in the programme are of prime importance. But in practice is not so. Community satisfaction is an important factor in all health care. This is almost a ready diagnosis of the effectiveness of the health care activities. Community involvement means more than the participation in carrying out clean-up campaigns or in constructing latrines etc. It means sharing of the responsibility and actively participating in planning and organising health services. It also includes the proper utilisation of these services by the community. This approach implies that health problems cannot be solved by concentrating only on health programmes to the exclusion of problems in this socio-economic field.

Unfortunately, up till now community involvement has received only lip sympathy. This is based on the non-realisation of the fact that the individual family and community are already involved and are participating. It is their health that is being considered. It is their attitude, habits or actions of individuals or the family that promote or endanger their health by acceptance or rejection of practices recommended. Trends are fast changing now and it is hoped that at least henceforth dependence will be placed on *Mahila Mandals*, Youth Clubs, Village Health Committees etc., and they will be activated and stimulated to take a lead in the improvement of the environment and distribution of health care.

Training

A change is indicated in the training, functioning and outlook of the existing health service workers and health institutions in order that their role in relation to primary health care can better reflect priorty health and social objectives of the community and country.

Attitude of professional and political groups

All members of health services and professionals should understand their role and be involved in the development of primary health care programmes. Professional associations should accept the objective of primary health care and all efforts should be made to promote change of attitude. Consumer participation has to be provided at each level. Political will and political decision to change are absolutely needed as also national commitment to develop a better and democratic health care delivery system. It is only recently that the family planning programme, which was a health ministry's programme, has become a national programme.

Provision of drugs in PHCs and distribution on payment

Year after year the budgetary provision for drugs in PHCs is increasing and the cost of medicines is also soaring. There is always a cry for more drugs in PHC and at the same time there is usually an imbalance in the procurement and stocks of medicine. The stocks of basic drugs required for common ailments run out quickly and some drugs which are not generally required remain in plenty and even go waste with date of expiry. Rationalisation is required for ensuring an adequate and uninterrupted supply of the cheaper basic drugs and to minimise on the use of sophisticated medicines and antibiotics.

In this context it is also for careful consideration by government whether some charges (to cover the actual cost of the drugs) may be introduced. Any commodity or service in normal life is paid for and it is not understood why an exception has to be made for medicines. Medical consultation may be free because of the widespread poverty, but nominal or actual recovery of cost of medicines from the consumer requires a serious thought. Payment for medicines will probably enhance the value the medicines in the minds of the people, which at present they are taking for granted or even thinking that it is inferior to what is available on payment in a drug store. In the interior areas the introduction and utilization of cooperative facilities for stocking and selling basic drugs should also be given a fair trial.

Private practice

The government should seriously consider prohibition of private practice by government medical officers. By and large it has been observed

in those states where the service conditions have permitted private practice the doctors' concentration is mostly on private practice at the cost of various other functions they have to perform particularly in PHCs. This has been a burning question, of course, but the central government and some states have effectively banned private practice and the remaining states may be well advised to follow this healthy trend. Comprehensive health care by the community physician does not appear to go well with private medical practice on individuals.

Criteria for evaluation of alternative approaches

A few alternatives have been suggested at three levels of service, village/sub-centre/block. Whatever alternative approaches are considered they should relate directly or indirectly to the goal. Dr. Newell has referred in his book "health for the people" to some confusion in the objectives. Very often activity is confused, and sometime methodology too, with the objective. The goal or ultimate objective should be improved health. The alternative approaches may contain a number of programmes and each of them may have its own objective or objectives in an hierarchy from immediate/intermediate (there may be a number of intermediaries) to the final or ultimate objective.

Now the highest priority is on the reduction of birth rate. This is to be achieved through extended MCH and FP programme. One of the basis of the extended programme is the reduction of infant and childhood mortality and morbidity which is attempted to be achieved through improved MCH, immunization and nutrition. This element should be one of the intermediate objectives of the approach. The recommendations of the selection of the approaches will be based on the objectives directly related to health through various intermediary objectives to the ultimate objective. Preference will have to be given to other considerations like the availability of resources, time factors etc.

To achieve the best results, programmes should be designed on the basis of cost effectiveness studies. Unfortunately this is a subject not explored adequately and in India practically nothing has been done, so there are many unanswered questions.

Table 1. First tier—village level.

Types		First line workers	Alternatives	Organisation
A. Main services to be provided Promotion Preventive Curative Rehabilitation What proportion	a) Intense health—education promote — personal hygiene — small family norm — Minimum protected water supply — storage of water at home — drainage—(water sanitation—antimalaria measure) — disposal of excreta — nutrition	1. Employing a male and female health workers for every 5,000 population or every 2,500 population or even less population 2. Employing a doctor for a population of 10,000 or 5,000 who will run clinic daily at sub-centre and visit each village once a week 3. Every family (mothers, housewives, grandmothers) equipped to deal with problems within its competence	Should they stay in a central place in the village or make home visits to a) all houses or b) a house asking for help or e) houses where women in reproductive period are present or (d) houses where the old and disabled are present	a) community health worker—purely on voluntary service or a small payment; if payment, who is to pay b) drugs and supplies c) how to organise referral system d) coordination with community development activities and particularly—schools f) arrange people's involvement
	b) Advice and/or service — antenatal — postnatal — care of under fives	4. Recruiting an able bodied male or female worker resident in the village able to spend not more than two hours a day to do the job (one for 200 houses, one for 100 houses, one for 50 houses)		
	c) First aid treatment of minor ailments d) immunization service e) nutritional supplement f) basic sanitation g) recording and reporting birth/death/what is happening in the community	5. Trying the same as (4) with school teachers. 6. Making every government/panchayat worker in the villages work as a community health worker 7. Appointing a village health committee whose members (a) can take the work of community health workers as in (4) above or (b) act as an advisory body—link between village and panchayat 8. Appoint a few young volunteers to activate health education particularly in respect of follow-up and prevention of drop-outs		

Table 2. Second tier : sub-centre level.

Level	Alternatives	
	Workers	Organization
At 10,000 population or 5,000 population or 2,500 population or more than 10,000	Sypervisory male /female worker only or health assistant/medical assistant in replacement or in addition, to look to activities other than those specifically allocated to supervisor male/female worker If the latter, what function will be allocated and hierarchy or a doctor —for this purpose who will attend daily—primary health centre doctor during weekly or biweekly visit or a mobile team from primary health centre/government and voluntary (who will be members)	a) allocation of duties b) supervision with particular attention to accountability c) training what curriculum how often who will teach d) coordination e) arranging public involvement f) transportation g) drug and equipment necessary and supply h) supply of latrine parts i) organization of a local cooperative health from persons available in the community its

Table 3. Third tier—block/primary health centre level.

Level	Alternatives		
	Organization	Training	Role
Primary health centre at 1,00,000 population or 50,000	Staffing : a) number or doctors and their allocation of duties—functionally or geographically b) other staff — any change Block extension Educator or B.Sc., (Public health) trained health worker to help medical officers in supervisory and health education functions in the field and administrative function in the office. What will be his function?	Training : 1. Should doctors be posted fresh from colleges, or they need some training if so, in what? (Is there any uniqueness* in the primary medical/ health care training of doctors?), When—after graduation, (in service) if so, period or where, when —during rural internship/ surgeonship —if so, how to organize or both (during house-surgeonship plus pre- and in-service) 2. Other staff : — is it needed if so, in what, how long and when and where	Any change in in role of doctors and their relationship in status with doctors in hospitals Drugs and equipment, supply stock — free or small payment — any change in drugs, stores equipment etc. — authorized list of drugs or at the choice of the doctor — transportaion — supervision—any change — peoples involvement — coordination — communication—organization of personal contact — relation with referral hospital

*There is a general feeling that the uniqueness of speciality of primary medicine is in:
(a) clinical medicine/particularly general medicine, paediatries and social medicine including preventive medicine
(b) psychology, especially the study of development and variation of personality; and
(c) sociology especially the influence of marital, familal work, and neighbourhood situation on health and sickness and the organization of health services and their relationship with other services and the community generally.

General Review

INDIAN EXPERIMENTS IN DELIVERY OF HEALTH CARE—A REVIEW AND IDENTIFICATION OF NEEDED AREAS OF STUDY

A. Timmappaya* And K.G. Rao**

Though from time immemorial India had certain organised services for the care of the sick and infirm, it was limited to certain groups and did not cover the whole population. When modern medicine was introduced into the country the service based on this system was geared especially to the British residents in India, government employees and military personnel. Subsequently, however, some efforts were made to provide health facilities such as for control of epidemics, setting up of civil hospitals in certain urban areas and a few rural dispensaries in outlying areas. Obviously neither the health care planning nor medical education was based on the health needs of the people. The Bhore Committee in their report (1946) explicitly recognized the need to orient health services organization and medical education to meet the comprehensive health needs of the population and recommended setting up of a network of primary health centres (PHCs) to cater to preventive and curative health care needs in rural areas, a supportive network of secondary health centres and district hospitals for surgical and other referral services and expansion of education and training facilities for health services personnel. The recommendations of this Committee are being progressively implemented as a part of health services development programmes launched in the different Five Year Plans.

During the first plan period, PHCs were set up to provide integrated preventive and curative health care for the population in a block-ranging from 50,000 to 1,50,000. After the centres were in operation for sometime it was realized that they were not able to cater to the comprehensive health needs of the population they are supposed to serve. Subsequently the Mudaliar Committee (1961) after reviewing the situation recommended slowing down the pace of development of PHCs, but strengthening the existing ones. Over a period of time, peripheral health services have expanded considerably as reflected in a recent estimate of 5,317 PHCs, 5,123 rural family welfare planning centres and 35,274 rural sub-centres in

*Director, National Institute of Health Administration and Education (NIHAE) Greater Kailash, New Delhi.

**Professor and Head of the Department of Social Sciences, National Institute of Health Administration and Education, Greater Kailash, New Delhi.

the country. It is realised now that despite expansion of the rural health infrastructure, the health care coverage is very limited, especially in the rural areas and the concept of positive health and preventive and promotional health care are least provided for in the health delivery system. The major emphasis of the existing health care is on curative services (and that too in urban areas), while a majority of the causes of morbidity among the Indian population lies in the area of preventable diseases. Some people attribute this to the import of western models of delivery of health care with its emphasis on specialisation, urban based and sophisticated facilities and equipment and essentially hospital based health care. This model hardly suits the needs and health conditions of India. The flaws of the health care system are also reflected in the medical education which produces doctors who are reluctant to serve in the rural areas. The minimum needs programme has given priority to public health measures for control of communicable diseases, educational and preventable health care inputs in addition to suggesting the upgrading of 25 per cent of PHCs to 30 bedded hospitals. But still the coverage is very inadequate and tragically enough in the face of preventable diseases and morbidity, even the existing services are not reaching the people adequately thereby resulting in continuing ill-health and sustained mortality and morbidity. The less recognised, but nevertheless more important health problems lie in the vulnerable areas of malnutrition, particularly among women and children, and a wide range of communicable and other diseases that result from unsanitary environment and poor drinking water facilities. This combination of health problems would definitely point to the inadequacy of a purely curative approach of health care, and increases the importance of community education for health care. Here is a paradoxical situation with a changing health needs structure that has to be met by a relatively static system of health care. In order to augment the organised health services and to improve their access and utilisation, several strategies are being tried in different parts of the world and in different parts of India. The origin, overall philosophy and approach of these experiments are a clear recognition of the importance of social, economic and developmental factors in the maintenance of good health. As a means of bridging the cultural and communication gap between the elite medical profession and rural masses, community workers have been selected, trained and used for health care delivery tasks. While the primary focus is on Indian experiments, it is known that similar experimentation is going on in different parts of the developing world and it is recognised that a large number of these experiences are relevant for a proper understanding and analysis of the Indian experience. In this context it may be mentioned that the two documents put up by the World Health Organisation (WHO), namely 'Health by People' and 'Alternative approaches to meeting basic health needs in developing countries' which represent carefully conducted case studies in about 10 to

12 different countries in the world. While taking note of the information contained in these case studies, primarily the Indian experiments are discussed here.

For the purpose of classification, while recognising the problem of multiple criteria and the consequent overlapping classificatory system, the projects are broadly classified into four areas : 1. Projects with emphasis on nutrition and integrated maternal and child care; 2. Projects which are hospital based, and probably funded from out of hospital funds; 3. Comprehensive health care projects, and 4. Projects which are essentially based on community's contribution to their own health care, based on the principle of cooperatives somewhat similar to the health insurance system that is currently prevalent in some of the western countries.

1. Nutrition and integrated maternal and child health care projects

Under this category there are four projects, the Poshak project, the Kasa Model project, the Indo-Dutch project and the Village Child Care Centre project. Of these projects, three are continuing and one is a completed project. The Poshak project which was completed sometime back was conducted in Madhya Pradesh between 1971 and 1975 with the objective of evaluating the feasibility, efficiency and cost aspects of a macro integrated health-cum-nutrition pilot study in tribal Madhya Pradesh. It was based on the principle of take-home-food for children up to three years and pregnant and lactating women with the support of child care education and health services, utilising the existing government rural health network of the state. The project was jointly sponsored by the state department of public health and family planning, Government of India and administered by CARE. Financial assistance was also provided by Government of India, United States Agency for International Development (USAID) and United Nations International Childrens' Emergency Fund (UNICEF). The project was operated in 12 districts of Madhya Pradesh of which 10 were tribal. The study included a sample of 12,000 children and 2,700 women drawn from 514 villages. The sampling frame included 88 PHCs and 204 sub-centres. The package of services consisted of food supplement, preventive and curative health services and maternal and child-care education. A seven day ration at the rate of 100 gm a day per child and 200 gm a day per mother was distributed weekly from the PHC. The educational input consisted of demonstrations, flip charts, growth charts and films. These were organised through inter-personnel contacts with the villagers and health services, consisting of fortnightly village clinics to provide immunization, deworming and curative services, education and medical advice carried out by the paramedical staff in the fortnightly home visits. The project had three phases, an exploratory phase, an extensive phase, and an intensive phase. The project maximally used the

existing government infrastructure of health and tribal welfare for implementation, supervision and storage of food supplements, while the project's research staff were concerned with the planning, coordination, setting up of the study and evaluation. The project used modern management techniques like Programme Evaluation Review Technique (PERT), inventory control, linear programming etc. and had a built in monitoring and evaluation system and used a simple two way management information system including monthly reports from the PHCs and monthly progress reports from project leaders. Evaluation indicators used in the project were efficiency in the delivery system, participation by the community, impact on the target group, cost-effectiveness and spin-off benefits. The project used an experimental design providing for a comparison of an experimental group of target children and women who received the package of services continuously for seven to 16 months with a matched control group and the project had built into it a series of cross-sectional, longitudinal baseline, mid-term and final evaluation studies. The project found that this approach of take-home-food is operationally feasible and the cost of delivering the package of services was estimated to be Rs. 208/- per child per annum in 1972. The project was able to estimate the cost of different components, such as food, medical services, education and personnel costs. This approach worked very well as an educational tool in the illiterate community and there was a three to four per cent increase in the utilisation of the health services particularly in terms of acceptance of maternal and child health (MCH) services, immunization and family planning methods. There were definite improvements in the nutritional status of the children covered by the programme and considerable gain in the knowledge of health care practices among the mothers. The project identified among its problems logistical problems like transportation of the food supplements, their maintenance and proper storage, problems of preparation and manufacture through local agencies and adequate strengthening of the district level infrastructure with proper coordination between the concerned state departments of tribal welfare and health. The project also recognised the problem of commitment and motivation of the workers which is probably common to all such endeavours. Among the positive findings the project found that the take-home-food strategy was feasible and effective. It recommended inclusion of older age groups (three to six years) for minimising the diversion of food to other siblings in the family and the need for developing culturally and psychologically acceptable mother foods. The seasonal adjustments of food to suit the needs of the population was also highlighted. The need for providing child care education to the young mother substitute in the family was also recognised (seven to ten years olds at home who look after the younger kids).

The Kasa model project was designed after a demonstration of success in domiciliary treatment of malnutrition cases in the earlier project

of Palghar. Domiciliary care was found to be cheaper and culturally better acceptable and the project successfully used community workers as part-time social workers. The Kasa project initiated in 1974 operated in a socio-economically poor and predominantly tribal (88 per cent) population. The project operates in 70 experimental villages with a 64,000 population with 10 villages as control. Services cover MCH, immunization, health and nutrition education, environmental sanitation and family planning, surveillance of under sixes and married women-especially those that are pregnant and lactating. Part-time social workers adequately trained provided with simple drugs and having referral functions, deliver the services in close collaboration with the existing PHC staff. Untrained *dais* are also being trained and used for deliveries under Auxiliary Nurse Midwife's (ANM) supervision. PHC pays for the services of part-time social workers (P. T. S. W). Some of the problems faced by the project are delayed government action in PHCs, high turn-over of PHC staff and PTSWs, pre-occupation of government health staff with other priority health programmes, difficult terrain and communications and the difficulty in getting across the objectives to tribal people. Preliminary results are encouraging and ultimate evaluation is awaited.

The Indo-Dutch project for child welfare started in 1969 is an effort to explore methodologies for increasing the effectiveness of existing child welfare services through linking it up with other activities for mother and child care, like nursery schools primary schools, creches. nutrition demonstration units and economic and developmental activities like setting up poultry and dairy units and adult education. The project covers a population of 45,761 in 47 villages (tribal and rural) with programmes of health, education and nutrition (provision of a locally prepared nutrition supplement—the Hyderabad mix). In its three years of work the project claims eradication of gross malnutrition in 7,000 children and acceptance of family planning by 212 mothers. Though initially supported by the "Niloufer health team", the project is gradually transferring responsibility to existing PHC's *Mahila Mandal's* dairy and poultry units, fruit and vegetable gardens, preschool education programmes and use of trained workers have enlarged the scope of the project. Coverage of each ANM has been reduced to a population of 5,000, *dais* have been trained to conduct deliveries, and *Mahila Mandals* have been involved in economic and developmental programmes. Results of evaluation have not been reported.

The nutrition rehabilitation centre attached to the Erskine hospital was started in 1971 with the main aim of reducing blindness due to malnutrition through a health and low cost nutrition programme. The project provides for nutrition demonstration and education to mothers, immunization of children care of pregnant and lactating mothers and aims at using

the centre for training of medical students in community medicine. Systematic surveys were conducted to identify the prevalences of protein calorie malnutrition (PCM) in the village population, including deficiency signs and general illness. Demonstration feeding, treatment of common diseases, provision of free medicines and referral services, immunization of children, were undertaken. The project identified, trained and utilized the services of women village health workers in addition to *Balsevikas* already working in the areas. As a result of its efforts the project demonstrated improvements in nutritional status of children, reduction of xerophthalmia, reduction in common illness and in general increased knowledge and awareness among mothers about child care and nutrition.

All the four projects have been concerned with affecting improvements in nutritional status through health education, provision of nutrition supplements and general health care of mother and child. Two projects do not lay emphasis on family planning services and one does not use community level workers. While some have reported systematic data on evaluation of process as well as outcomes and used modern management techniques (e. g. Poshak) other have reported only improvements in nutritional and health status of target population. Cost data is available only for two projects. This narrows down the scope of their work considerably.

2. Hospital based projects

There are a few such projects. Most of these are of recent origin and are in the state of take off. *The Harriet Benson Memorial Hospital project in Lalitpur, Uttar Pradesh* started in March 1976, operates in a backward area, economically and educationally poor and tradition—bound. It aims at providing low-cost effective care to villagers through use of trained Village Health Workers (VHWs) with adequate referral facilities. Community involvement is achieved through provision of building by the village for VHW clinics, village health committees, selecting the VHW from among the community and payment of honorarium to VHW by the village *Panchayat*. Services provided cover MCH, immunization, and health education. The project though too early to evaluate has started off well with clear cut roles and responsibilities for funding, resources and implementation between hospital community and government and has clear-cut targets for improvement in health situation.

The Padhar Hospital project in Madhya Pradesh is in a hilly tribal area inhabited by Gonds. A baseline survey was done and the project aims at providing comprehensive health care services with the hospital as the base. VHWs are trained and used and so also the traditional birth attendants. The project though recent is facing some problems inherent in working with tribal groups.

The Himachal Pradesh Hospital project at Manali, started in 1974, aims at giving basic health care to the backward and remote villages, through use of trained VHWs. Coverage of services include MCH, family planning immunization, care of simple illness and infectious diseases. Practical training is imparted to VHWs through the hospital staff. VHWs administer simple medicines and people buy it from them. The Scheme which is only a trial has only five VHWs working and has no sustained source of funds or technical support. The population covered is 1,000.

3. Comprehensive rural health projects

Substantial and real experimentation has gone on in three schemes reported. The better-known among these is the Jamkhed project n Maharashtra which covers 40,000 people scattered in 30 villages with intensive and comprehensive health care programme. Trained VHWs are employed in the project and a mobile health team supervises the VHW once a week. Health campaigns and nutrition supplement distribution programmes are organised through young farmers' club, which also cultivates food for children covered under the nutrition programme. The three tier system employed in the project has the VHW, who is supervised by the mobile health team with the nurse midwife, paramedical worker and social worker at the next level and the latter, in turn, are guided by the doctors in the health centre. Referral facilities are available at the district hospital at Ahmednagar. Evaluation of the project revealed that target populations were reached and significant improvements occurred in the targetted spheres from 1971 to 1975. An interesting aspect of this project is its integration of health care delivery with eonomic development activities like better irrigation facilities, tubewell digging, making of roads, farming etc. with significant community involvement.

The Mandwe project in Maharashtra began in 1973, in North Alibag *Taluka* covering a population of 30,000. The project is in three phases. Community involvement is achieved through selection of workers from community, involvement of *Panchayat* and *Zilla Parishad* officials and initiation of other development programmes for economic uplift and social change in the tribal population like cultivating land and growing food. While successfully working with and augmenting the existing government infrastructure, the project faced problems in imparting a certain level of professionalism to the VHW, with the purely curative orientation of ANMs and doctors, lack of supervisory skills among doctors and a somewhat apathetic population.

The Miraj project stands out among other comprehensive health care projects because of its large population coverage (about 2,30,329) maximum coordination with existing health infra-structure with lesser targets for

coverage by each functionary and giving a trial to government's policy of using multipurpose workers in place of unipurpose ones. The project had a baseline survey, training inputs, inclusion of indigenous *dais* and village health assistants in the new delivery system and very clearcut job descriptions for each category of worker. Supervision, concurrent evalution and feedback system, monitoring, inservice training and smaller worker population ratio have been identified as some of the causes of success of this experiment. Problems identified in the project are doctors' reluctance to visit sub-centres, their curative orientation, disinterest in supervision, poor training abilities, frequent transfers of staff, diversion of health staff in vertical programme at spells, lack of coordination between health agencies and shortage of medicines at sub-centres.

These set of projects wider in scope, more comprehensive in their coverage and more systematic in their evaluation procedures have demonstrated the usefulness of a comprehensive care approach through maximum community involvement. The need for concurrent, built-in evaluation and monitoring is indeed very great. Probably such projects have the maximum potential for replication.

4. Schemes of subsidized medical care based on a system of health cooperatives

Based on the principle that no service is valued till one pays for it, projects using the system of health cooperatives have been in operation in a few places. Of these, Manipal's Medicare Plan covering medical care, eyecamps, school health care and rural MCH homes is essentially a graded system of pre-payment for a coverage of family health care. The coverage so far is 3,000 families, in the areas surrounding the hospital which is essentially meant for clinical training of medical students. The project has no component of VHWs or community involvement except for payment of premium. It is too early to judge the usefulness of this approach as the project is contemplating expansion.

The well-known health cooperatives in Kerala started with the twin objectives of providing curative and preventive care on subsidized payment to members of cooperatives and to provide self-employment opportunities for unemployed doctors. Coverage is one *Panchayat* each. Due to its base in cooperative management, the local community is involved. It is economically viable, accessible to the poor and is probably a good model for rural medical care.

The Mallur project is essentially an attempt to attach a health service to the Mallur Milk Cooperative in one district in Karnataka. St. John's Medical college provides additional inputs mainly in the shape of

expertise and equipment and also uses the centre for rural training of its interns. The project started in 1975 with a wide range of services, both preventive and curative, and included community services like water supply sanitary latrines, health education and nutrition education and worked in close collaboration with government health personnel. While members of the milk cooperative and their families were entitled to free care, non-members have to pay for drugs, dressings and minor surgery. Preventive and promotive care is free to all. Due to rise in cost of fodder, five months after the project started the cooperative decided not to sell milk to the government dairy and government stopped contribution of two paise per litre as a health subsidy. But the community decided that the milk cooperative would contribute five paise per litre of milk to meet costs of running the health centre. The scheme is running well with contributions from the milk cooperative, St. John's Medical College and government health services. The project demonstrates that an economic cooperative can substantially support recurring costs of health programmes. The project is intending to train and use VHWs to do health education and preventive care.

The Mini health centres project in Tamil Nadu was initiated by the Voluntary Health Centre in Chingleput, Madras with a graded payment scheme for health care by the population. Catering to a population of 5000, the scheme aims to provide comprehensive, continuous health care based on community involvement. The project has planned layers and gradients of health care based on health posts to be manned by lay first-aiders away from mini health centres. Mini health centres serve 5000 population. By paying 0.5 per cent of his annual income, persons in the community can get complete health care. The project is reported to be replicable involving a cost of Rs. 18,000 to look after 1000 families ; the cost to be equally shared between central government, state government and the community. Four mini health centres linked with sub-centres and supported by three health posts would deliver the services.

In the following paragraphs an overall appraisal of these projects has been attempted on a few important variables.

1. *Duration of the project :* in this review, the projects included range from those that were started from 1969 to those that have been started as late as mid 1976. By and large most of the projects are of three to four years' duration.

2. *Population coverage, number and type of population :* Of the projects reviewed, eight project exclusively concentrated on rural population, five worked with tribal population and two have concerned themselves with both rural and urban population, and one is concerned with tribal

and rural population. Therefore, there is a strong rural bias in these projects. Regarding the population covered, there are schemes such as the Manali Hospital project covering 1000 persons and some projects cover more than one block with a population of two to three lakhs, such as the Miraj project and the village child care centre project. But the modal tendency is to concentrate the health care delivery on 30 to 50 thousand population.

3. *Services Provided :* Regarding the services provided, most of the projects aim at providing preventive as well as curative services, integrated services like MCH, nutrition, family planning, control of communicable diseases and health and nutrition education, etc. Of these some projects that have a strong component of nutrition have also a programme of providing supplementary nutrition feeding programmes, nutrition education and assessment of nutritional status. Almost all the projects have mentioned control of communicable diseases, T. B. and leprosy. Environmental sanitation and health and nutrition education are provided only in a few projects. Hence, it is clear that the scope of the services provided under the projects are quite hetrogenous despite a core of common services offered by all the projects.

4. *Source of funds :* Some projects have multiple funding sources while others have only one source—some have external agency support while others rest on the institutional funds—e.g., hospital based projects and others are entirely funded by community contributions.

5. *Involvement of existing infrastructure in health :* While one project has exclusively utilised the existing government structure of health and tribal welfare (project Poshak), there are others that are totally private, community supported endeavours, such as the rural cooperatives and projects that rely upon only hospital personnel, funds, etc. The medicare scheme, the Manipal scheme, the trial of village health workers scheme in Himachal Pradesh and the community health project of Harriet Benson Hospital are examples of this type.

6. *Type of workers used :* Village health workers picked up from community and trained are used either part-time or full-time in many of the projects. Their designations vary from project to project. They are called village health workers, field workers, lay first aiders, part time social workers etc. In another project a wide range of voluntary workers are involved such as, *dais*, *Mahila Mandal* workers, youth clubs, *balwadi* workers etc. One project has made a very successful use of the existing child welfare staff like *Balsevikas*, and the *Mukhyasevikas*. Three projects have not used any community workers, directly and these are the Medicare Scheme, Poshak Project and the Rural Cooperatives Projects in Kerala.

7. *Organization of the health care :* While the tiers used vary from project to project, the most common is the three-tier system with the local village workers at the bottom and the medical doctor or the clinic doctor at the apex with a auxiliary nurse or a nurse-midwife in between. One project has explicitly noted the need for another tier between the nurse and doctor, preferably a public health nurse.

8. *Community participation* : Various levels and modes of community participation have been attempted in the different projects. Local self-reliance, people's active participation in social and economic development activities, community decision-making on selection of health workers, local contribution in cash, facilities, manpower, logistics support, construction and maintenance of facilities represent the wide range of approaches used. Most projects while reporting satisfaction and community acceptance of the community health worker have also identified problems in their functioning, partly arising due to local socio-cultural conditions and partly due to difficulties inherent in implementing any innovation.

9. *Evaluation :* Some projects have developed health status indicators for evaluation. Changes in health status from the baseline to post-intervention survey is used as the indicative measure. Thirteen projects have used baseline measures both for purpose of planning the health services and as a bench mark figure. Some have used concurrent evaluation and monitoring approaches with scope for contextual studies. A few projects have reported cost data. About replicability, projects have reported different experiences. But many projects have not assessed recipient reactions to the new system, but for offering impressionistic views on the community's reactions. The only exception is the evaluation report on VHWs of the Mandwe project. Community acceptance and worker impact seem to be the weaker aspects in the existing evaluation.

It is apparent that these projects are very interesting and innovative. But they are micro level projects more like case studies that do not permit generalizations. They cover small populations with the exception of Miraj. Thus, there is need for bigger experiments probably covering a district atleast, and suitable methodologies have to be developed for the same. The uniform approach used by the projects of using village health workers needs a fresh look in terms of what other categories of community workers could be involved in health delivery tasks. In this regard the Srivastav Committee's recommendations need to be considered. NIHAE, for instance, is currently involved in a field experiment to test the feasibility and effectiveness of involving primary school teachers in the delivery of health care. This is a collaborative research project funded by the Indian Council of Medical Research (ICMR), involving other institutions. In addition to trying fresh categories of workers attempts must be made to

use already existing health professionals like indigenous medical practitioners, indigenous *dais*, mid-wives, etc. In fact, a fruitful starting point for a wider experimentation is to develop more effective ways in collaboration with the existing health infrastructure and critically evaluate what other categories of workers need to be added afresh and how best to utilize the existing resources. More innovative approaches to promote community involvement also need to be tried out. Very often a willing community may spare its time for health activities but resources have to be found elsewhere. The plan of action of the Srivastav Committee report emphasised the three tier system linking the PHC, district hospital and the medical college complex in a meaningful interaction resulting in good delivery of health care. This was placed before the Deans' Conference held by NIHAE in April this year. This approach merits experimentation.

Needed areas of study

In the process of this review the following areas of research have been identified.

1. Studies on monitoring.
2. Studies on training.
3. Small case studies on specific problems arising in the project.
4. Studies on relative effectiveness of approaches to community involvement.
5. Integration with existing government infrastructure.
6. Periodic surveys of community satisfaction, perception and acceptance of workers.
7. Studies on cost-effectiveness of different approaches.
8. Relative effectiveness of different categories of community workers in health care delivery.
9. Studies for development of non-health indicators of the success of the alternative system.
10. Development of packages of multi-sectoral activities to promote health care delivery.
11. Exploratory studies on the implication of involvement of women health workers for the enhancement of status of women.
12. Evaluation studies to test out different training modules for community health workers ; including manuals and reinforcement mechanisms.
13. Rationalization of the tiers in health care delivery through experimentation.
14. Studies of long-term and short-term effects of using non-health personnel for delivery of health care.

GUIDELINES FOR DEVELOPING ALTERNATIVE MODELS FOR DELIVERY OF HEALTH CARE

KAMALA GOPAL RAO*

In India, even before the attainment of independence the governments was concerned with the problem of providing adequate health services to its population. In order to survey health conditions and health organizations and to make recommendations for future development of health services the Health Survey and Development Committee (Bhore Committee) was set up in British India in the year 1943. The recommendations of this Committee contained in their report of 1946, provided the blueprint for the development and implementation of health services in post-independent India. Of the several aspects of health services organization that this Committee deliberated upon, the more important ones were the following :

1. The need to cut down the preventable morbidity which was estimated by the Committee to be about 50 per cent.
2. The need to correct the imbalances between the rural and urban areas in terms of health facilities and health manpower.
3. The need to provide medical relief and preventive care to the vast rural population of the country.
4. The need to recognise the importance of social, cultural and environmental factors in the preservation of health.
5. The need to develop a philosophy of self-help and cooperative endeavour among people to improve their own health and maintain a healthful environment through widespread health education and increase in general education.
6. The need to shift the emphasis of the health services from a predominantly curative approach to one with sufficient emphasis on prevention and promotion.
7. The need to review the problem of health in the broader perspective of development and its social and economic correlates.

*Kamala Gopal Rao, Professor and Head of the Department of Social Sciences, National Institute of Health Administration and Education, E-16, Greater Kailash, New Delhi.

8. The need to provide adequate health protection to all, covering both its curative and preventive aspects irrespective of their ability to pay for it.
9. The importance of social factors such as unemployment, poverty and social customs like *purdah* and early marriage in ill health.

Within the ambit of the philosophy emerging from a consideration of these concepts, the Bhore Committee suggested some short and long term plans and gave sufficient details on their development.

Considering the fact that it is over 31 years since the Bhore Committee submitted its report and that India attained independence from colonial rule over 20 years ago, the present development of health services obviously is very indequate and insufficient, both in terms of quality and quantity. A somewhat over-simplistic view of the development of health services tends to look upon it in a fragmented fashion either in terms of increasing the number of doctors and the concomitant increase in the number of medical colleges or in terms of increase in the number of hospitals and dispensaries. The more basic problem and challenge in providing the health services to the growing population of India in relation to the felt need of different populations and sub-cultural groups within the country has not received sufficient attention. Even now, despite sufficient increase in the health budget in the different Five Year Plans, there are vast areas in the country where even the most rudimentary form of health care is not available. Any plan to provide health care to Indian communities has to reckon with a few basic realities of Indian social life. Prominent among these are ; the large number of people who are extremely poor and are described as below the poverty line (their numbers are estimated to be 40 per cent of the population), progressively decreasing male female ratio as revealed through the decennial census primarily because of hazards of maternity faced by Indian women (932 women for 1000 men), an exaggeratedly high infant and child mortality; the wide range of preventible sickness to which people succumb ; vast illiteracy, especially of females ; (even in 1971 census female literacy was only 21 per cent and rural female literacy was only 15 per cent) relative neglect of girls and women. The National Committee on status of women has quoted figures to show that women use health services less than men, despite sickness) ; presence of vulnerable groups who need particular attention in the health organisation-women in child-bearing years and children below five years; the peculiar age-pyramid, with 42 per cent of the population below 14 years ; traditional and culturally rooted beliefs on etiology, spread and cure of diseases ; existence of and belief in traditional healers, folk medicine and indigenous medical practitioners ; nearly 80 per cent of Indian population residing in villages often in remote villages with poor or no communications and other

modernising forces. A subtle qualitative dimension is the unwillingness of the urban trained doctors to serve in rural areas and the unwillingness of rural folk to use the existing primary health centres (PHCs) and sub-centres. While some have placed the blame on the attitudes of health personnel, others have placed the blame on the faith of rural folk in traditional indigenous medicine. It is, however, true that the rural folk, the poor and urban slums have relatively little access to health services. Paradoxically enough, these are the very people who are in need of health care.

In the light of these social, cultural, economic and demographic realities, the existing system of health care delivery is not relevant for the country with its vast and varied health problems. The apparent expansion of medical colleges, training institutions for other categories of health personnel and number of hospitals and dispensaries with increasing emphasis on super-specialities limit the use of the health care system to the urban elite only. It is a poor imitation of western models, which are not suited to a developing country. The focus on personal health care based on the services of a large number of highly trained physicians and specialists is a capital intensive approach which primarily aims at curative rather than preventive medicine. This model is adequate for western countries where increased standards of living, higher literacy, nutrition and sanitation have resulted in decreased mortality and morbidity rates and therefore the total thrust of the health care delivery system is on providing specialised services to individuals rather than extending general medical care and comprehensive health care to communities. A Wilenski puts it, "The Western system requires an expensive and extensive medical education system, sophisticated equipment and literate population with some sophistication about disease and some faith in the medical profession." The only modification that developing countries have done so far while adopting the western models has been the inclusion of Health Assistants with a little training who essentially act as doctor-substitutes while most of the rural people still depend heavily upon indigenous healers. Even the Bhore committee, while outlining the duties of the primary unit staff suggested that Health Assistants should perform both curative and preventive duties of an elementary nature under the directions of a qualified medical officer. The spirit of these recommendations—specifically the role of the women Health Assistants in doing domiciliary visits to perform curative and preventive tasks-has not been reflected in the development of health services in India since the submission of Bhore Committee report. At the time of Bhore Committee report there were 47,500 doctors, while according to a recent estimate, there will be 1,66,100 doctors in 1978-79. Ramaiah and Bhandari state that of these 11,000 allopathic doctors will be surplus. It is worth-noting that the increase in number of medical colleges, doctors and hospitals and dispensaries during the last 30 years has not resulted in significant

improvements in the health status of the Indian population. Partly, this situation is due to the fact that health facilities are not the only things needed to keep people healthy. Social, economic and developmental factors affect health status. But no efforts have been made so far to make health planning a part of national planning. Consequently no action has been taken to integrate the medical system with the goals of economic development. This has been often referred to as the "technological mis-fit". The inadequacy of this approach is highlighted in a recent WHO paper which states, "There can be no question of simply grafting on to a struggling and largely agricultural economy, a high powered medical system, with ultra-modern hospitals, specialist surgeries and general practitioners making house calls." What is needed is "adapt or improve upon existing systems but not adopt" as Mahler puts it. Godber said, "... ...one cannot think in terms of an ideal pattern of health care. Any country must have a service suited to its own stage and pattern of social organization. Inevitably the developed country will have had services evolving over many decades, with the organisation continuously adjusted to the growing capacity of medical science to offer effective assistance. Services will have grown rather than have been designed and imposed as new structures....." There are features about the Chinese development, based on communes and using a large number of simply trained medical auxiliaries or "barefoot doctor" to bring a health message as well as a treatment and prophylactic resource to the rural areas, that may prove suitable for adoption in developing countries. These countries cannot yet achieve a full service on the lines used in the developed countries and well recognize their need to choose priorities. They can easily hinder their own progress by putting too large a part of limited resources into training physicians rather than larger number of nurses, technicians, or auxiliaries to provide a balanced health team."

The experiments presented hitherto indicate attempts made in different projects in India to move away from this traditional model. A common innovation in all these endeavours is to select community workers of low education, train them for a range of simple health care tasks including health education, nutrition education and environmental sanitation and use them to supplement the available health care personnel. Outside India, in the socialist world China has developed its own approach to health care delivery. The People's Republic of China has succeeded in its policy to break down the conventional system of health worker's roles and institutions and tried to develop a new labour intensive model which suits the needs of its predominantly rural population and the overall goals of economic development. Basic to all such efforts has been an explicit recognition of the causal link between health services and increased production. In fact the Chinese view is diametrically opposite to the view

of western economists who hold that health is a "Consumption" expenditure rather than a "production" investment. In most experiments with alternative approaches, there is also a recognition of the need to provide basic curative health care and simultaneously improve the environmental health, sanitation and safe water supply. Several health projects round the world, recognizing the need for simultaneous action on both the fronts, have experimented with strategies based on mobilization of community resources for improving environmental sanitation and use of community health workers for delivering primary health care. There is an increasing recognition that mere increase in number of trained medical doctors will not automatically result in optimal health care to rural populations or improvement in health status of people. Thus the traditional model of the health care pyramid (Fig. 1) with a heavy top and narrow base, with the major investment of resources in specialists, large urban hospitals and sophisticated equipment and a narrow base of minimal paramedical support is almost obsolete. The newer approaches envisage a model of a health care pyramid (Fig. 2) with a narrow top with some investment in doctors, hospitals, specialists, equipment, etc. and an enlarging base diverting investment from a few large hospitals to several health centres extending into the periphery with a broad base of primary care workers of various categories and with emphasis on community organisation for health care. In fact, the dictum is "Health by the people" and "health to people". The ruling philosophy in this approach is not "Best for the Few' but "good for the many". However, this approach is not to be interpreted as an effort to provide "inferior medicine to the rural poor" or "providing the underprivileged with second class medicine."

Traditional Medel of Health Care Delivery.

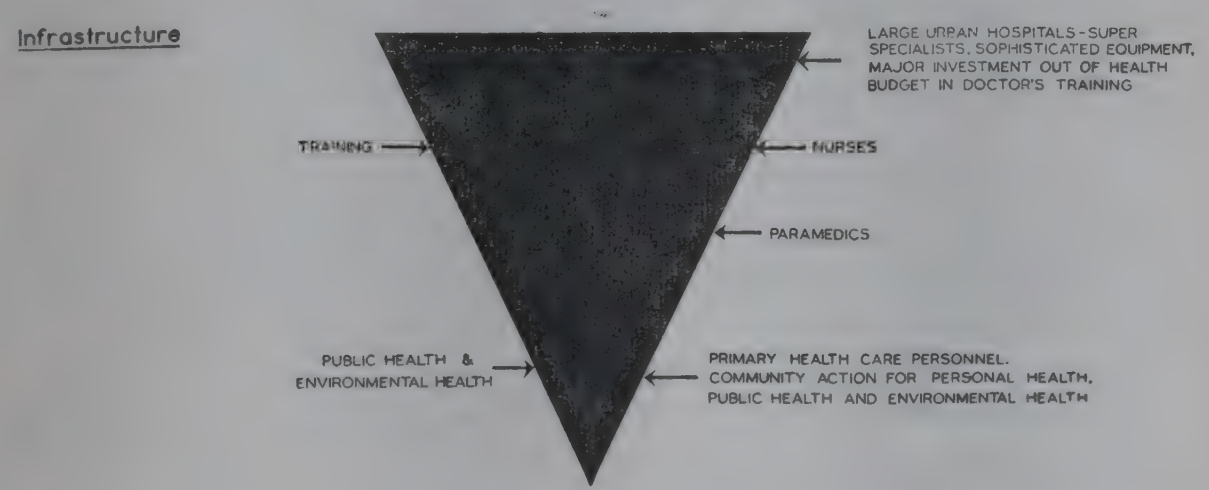

Infrastructure
LARGE URBAN HOSPITALS - SUPER SPECIALISTS, SOPHISTICATED EQUIPMENT, MAJOR INVESTMENT OUT OF HEALTH BUDGET IN DOCTOR'S TRAINING
TRAINING
NURSES
PARAMEDICS
PUBLIC HEALTH & ENVIRONMENTAL HEALTH
PRIMARY HEALTH CARE PERSONNEL. COMMUNITY ACTION FOR PERSONAL HEALTH, PUBLIC HEALTH AND ENVIRONMENTAL HEALTH

Fig. 1.

That there are no ready models is stressed by Ammundesen and Newell who state "It is a sobering fact that even now there are few examples of a health service that can be used as a model to demonstrate

Suggested Alternative Model

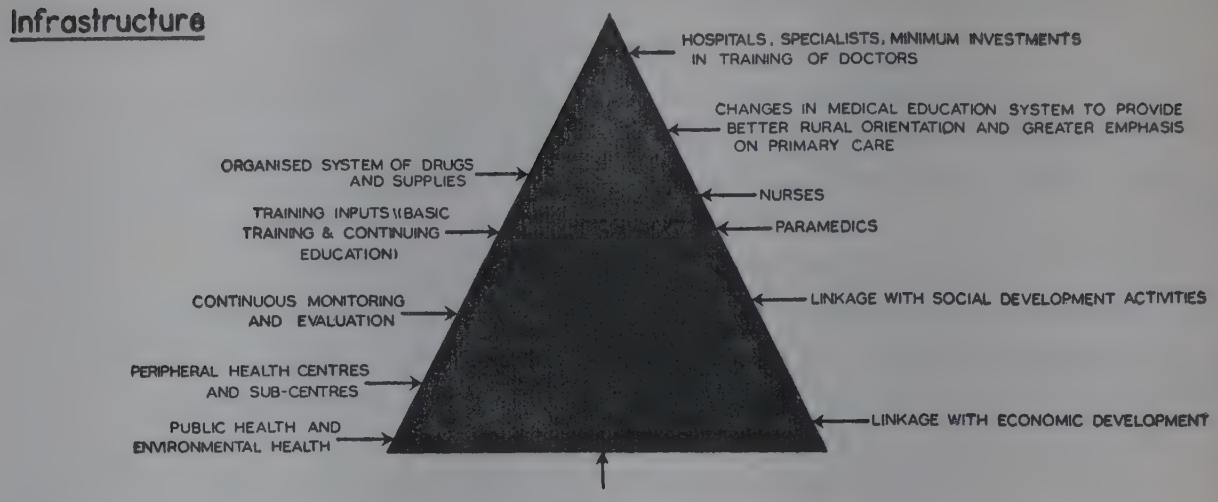

Infrastructure
HOSPITALS, SPECIALISTS, MINIMUM INVESTMENTS IN TRAINING OF DOCTORS
CHANGES IN MEDICAL EDUCATION SYSTEM TO PROVIDE BETTER RURAL ORIENTATION AND GREATER EMPHASIS ON PRIMARY CARE
ORGANISED SYSTEM OF DRUGS AND SUPPLIES
NURSES
TRAINING INPUTS (BASIC TRAINING & CONTINUING EDUCATION)
PARAMEDICS
CONTINUOUS MONITORING AND EVALUATION
LINKAGE WITH SOCIAL DEVELOPMENT ACTIVITIES
PERIPHERAL HEALTH CENTRES AND SUB-CENTRES
PUBLIC HEALTH AND ENVIRONMENTAL HEALTH
LINKAGE WITH ECONOMIC DEVELOPMENT

Fig. 2. (i) Well trained primary health care workers of all categories (non-physician health personnel) including indigenous *Dais*, midwives, doctors of indigenous systems of medicine, Health Assistants and Village Health Workers, *feldshers*, medical assistants, nurse practitioners etc.

(ii) Community action for personal, public and environmental health.

that primary health care can be developed in the villages at a reasonable cost and in a manner both technically adequate and socially acceptable". This is the crux of the problem. The Indian experiments in the delivery of heath care have been reviewed and the relevance of such experiments in the context of India's health services policy is amply reflected in the report of the Medical Education and Manpower Committee (popularly referred to as Shrivastav Committee), which emphasized the need to evolve a viable and economic alternative, placing greater emphasis on human efforts rather than on monetary inputs. The committee also recommended the training and utilization of a large band of semi-professional workers picked up from the community and suitably trained.

In the absence of a universally acceptable alternative model, an attempt is made to list the basic requirements, preconditions and criteria for a suitable model and to suggest some combination or strategies in different approaches to health care delivery.

Some of the important guidelines in designing alternative approaches are listed below :

1. The alternative approach should give primary attention to vulnerable and deprived segments of the population—women in child bearing age, children below five years, the poor and indigent, urban slum dwellers and those who have no access to any form of health care.

2. The alternative must be planned on an appreciation of the multifactorial nature of health. Health is a product of sound, healthful living, adequate nutrition, a proper understanding of one's own body, levels of general education, environmental sanitation, hygienic methods of living etc. The inputs in the alternative strategy must be based on this appreciation.
3. The alternative approach should be built upon the principle that health planning is an integral part of the process of economic development planning. Thus, in the new system primary health care activities should form an integral part of the national health system and community development activities, such as education, adult literacy, agriculture, housing and communication. This needs multi-sectoral planning and an application of the importance of non-health interventions for health system.
4. The overall philosophy of the alternative approach must be to identify and make use of available persons in the community, who are interested, enthusiastic and willing to engage in health-related tasks. In addition, already existing health worker like the *dai*, practitioners of indigenous systems of medicine may be suitably trained and utilized. Niger project in Tanzania, and Miraj project in India have successfully used the traditional birth attendents and the indigenous medical practitioners.
5. The persons who enjoy the confidence of the community and are considered as sources for health care must be utilised. Categories identified by the Committee on Medical Education and Support Manpower are the village post-masters, *gram sevikas*, school teachers and *dais*. Alternative approaches should use these functionaries for primary health care tasks.
6. Instead of relying entirely on imported technologies, attempts must be made to combine the wisdom of traditional systems of medicine with the modern. It may be recalled that the success in China's health care delivery is attributable at least in part to this strategy.
7. The experiments on alternative approaches must as far as possible give a trial to the new health policies and strategies initiated by the ministry of health and family planning, government of India. The Miraj Project giving a trial to the Multipurpose Workers' scheme, and the Rehbar-i-Sehat at Jammu and Kashmir and the Indian Council of Medical research (ICMR) funded projects trying out school teachers for delivery of health care are illustrative of this point.
8. Any concern for initiating alternative approaches must consider the problem in the larger perspective of its antecedents and

linkages in the training programmes of health personnel. Tanzania and China made simultaneous changes in the medical education curricula and training methodology to give emphasis on rural health and primary health care when the strategy of using community workers and bare foot doctors was launched. In this connection the Shrivastav Committee's recommendation of medical colleges taking over PHCs to use for student training is a worth while step that needs immediate implementation. The possibility of using the sites of alternative experiments for medical student training must be explored. Government Erskine Hospital Project, Mallur and Medicare Plan are already trying this.

9. The alternative approaches to be developed must adopt a service-cum-research approach. This implies the need to develop continuous monitoring, evaluation system and a viable management information system to ensure effective feedback. There is a need to develop other indicators of impact of the new approach than mere service statistics and performance data. To the extent the new approaches need to be carefully evaluated for their replicability, the emphasis should be on the process rather than the product.

10. Most of the Indian experiments seem to owe their success to the devoted, charismatic leadership of the project chiefs. While this is understandable for demonstration purposes, any large scale implementation of tested alternatives must prove their feasibility and success over and above devoted leadership. This will be an important issue in the sustenance of the initial success of the projects and therefore an important criteria for planning alternative strategies.

11. There is a need to rationalise through experimentation and evaluation the number of tiers needed in-between the village level worker and the other health personnel.

12. While it is good to encourage novelty and innovation in alternative health care delivery strategies, there is also a need to retain certain common parameters in their methodology to ensure comparability. There is a need for baseline measures, concurrent evaluation and contexual studies in order to estimate the usefulness of one particular approach *vis-a-vis* others.

13. Common to all models or approaches is the need for standardization of basic educational requirement for voluntary community workers, core training content, manuals and instructions, specification of tasks and roles for each category of worker, drugs

and equipment, built-in supervisory mechanism, system of continuing education and referral system.

14. Thus the three basic components in any model are (i) strengthening the infrastructure (ii) integrated development of health services and health manpower through training and (iii) improvement of environmental sanitation.
15. Primary health care in any model or approach should cover minimal treatment of minor injuries, health education, education to pregnant and nursing mothers, immunization for children, nutrition education, family planning and some action for provision of safe water supply, building latrines and waste disposal system. In addition to curative services, the approach must lay emphasis on preventive, promotive and rehabilitative aspects.
16. The approach should be built on continuous, sustained and effective community involvement and should continously aim at evolving innovative strategies for maximum community involvement. The nature and extent of community involvement must be periodically evaluated.
17. The approach should be effective in terms of cost, technique and organisation.
18. The approach must be based on the local funds rather than relying too much on external funds.
19. It must be broad based and flexible in order to absorb change.
20. The approach must be based on locally available resources and expertise, but must work in close coordination with the existing government infrastructure and voluntary agencies in the area.
21. The overall purpose of the approach should be to increase accessibility to health care, particularly in rural areas, and to vulnerable target population identified earlier.
22. Regardless of the approach an important issue is the career promotion aspect of the community health workers in order to sustain their motivation. In some countries, these workers can gradually reach medical colleges after several years of service. In Nepal, female health aids can become Auxiliary Nurse Midwives (ANMs).

Using these broad guidelines and the experience obtained in the Indian projects, a few basic themes have been suggested for alternative strategies.

Approaches based on reorientation of existing health service programmes and personnel to incorporate the primary health care concepts

This approach makes maximum use of existing infrastucture, linking the the infrastructure private practitioners of all systems of medicine

and semi-skilled health workers like the indigenous *dai*. This approach would be the simplest, because the investment in infrastructure and personnel would be minimum. This would also satisfy the principle of maximum use of existing resources. However, training and reorientation of workers to understand the primary health care concept is important.

Approaches based on reorientation and optimal use of the existing infrastructure and practitioners of all systems of medicine and voluntary part-time male and female workers drawn from the the community and trained for this purpose

This approach while substantially similar to the previous one, envisages an enlargement of the base of the health pyramid by addition of community level workers and implies additional training inputs. Continuous monitoring and evaluation for ensuring coordination with the existing governmental infrastructure is imperative to the implementation of this approach.

Approaches based on expansion of the existing infrastructure

For improving access through such measures as increasing the number of health centres, increasing the number of sub-centres, use of indigenous practitioners of medicine as well as community workers suitably trained are required. Dr. Sanjivi's Mini Health Centres project is on illustration of the expansion of the existing infrastructure to improve access and ensure better coverage, although it combines the philosophy of health insurance through payment by the community. In the Miraj project there is reduction in the population coverage of ANMs and Basic Health Workers (BHWs) which is another example.

Approaches based on an expanded scheme of health cooperatives

These are built on income-graded premia payment and linked with economic activity so that the cost providing health care may be generated from out of the funds coming from community contribution and economic endeavour. Health care is provided through paramedical and basic doctors, reinforced by linking up with the existing hospital system. Possibly a combination of the Manipal health cooperative scheme and the Mini Health Centres project and some aspects of Mallur Milk Cooperatives health project might be a good solution.

These are possible suggestions for trying alternative strategies. They are tentative and illustrative rather than final and exhaustive.

STRENGTHENING THE FOLK HEALTH SYSTEM : PROPOSED LINK BETWEEN THE HEALTH NEEDS OF THE RURAL POPULATION AND LIMITATIONS OF THE FORMAL HEALTH SYSTEM IN REMOTE RURAL AREAS

VIJAY KOCHAR*, S. M. MARWAH** AND K. N. UDUPA†

Background

Any planned health programme is, in final analysis, also a programme for a planned social change. A comprehensive health care programme can thus be viewed as a human machine for such planned social change. Underlying the philosophy of comprehensive health care is the hope that the scientific knowledge, norms and behavioural regimen of the medical culture will become established in the health behaviour of the people as an expected and desirable way of life i.e. the medical culture (scientifically sound health behaviour, norms and practices) will be integrated with the popular health culture. The goal of the health plans and programmes is not merely to deliver health services but to promote social change in the local folk health culture in order to establish, through participation, utilisation, learning and diffusion, a positive health behaviour for improvement and maintenance of health.

The fallacy of empty bottles illustrates[1] dramatically why this is difficult to accomplish. People think and behave in health matters within the knowledge, resources and organization of the popular health culture in tune with the fabric of rural life style. As will be shown later, there is a well developed and well established folk health system. The medical professionals' plan and practice within the framework of professional culture (current styles, norms, practices and medical values shared by the main-stream professionals). They, together with the urban elite and the bureaucrats, apply ethno—centre notions about the needs and behaviour of the rural folk in the garb of "scientific" theory and practice[2]. The contrast between the folk health culture on the one hand and the medical culture and the professional culture on the other, creates unavoidable medico-cultural conflicts whenever modern medicine is promoted in a

*Vijay Kochar I.C.S.S.R. Senior Fellow.

**Dr. S. M. Marwah, Prof. & Head, Deptt. of P.S.M.

†Dr. K. N. Udupa, Professor and Director, Institute of Medical Sciences, Banaras Hindu University, Varanasi-221005.

traditional rural setting[3]. It is unrealistic to expect that the modern health care services, delivered through health centre complex (the formal health system) will automatically replace the folk health culture and the folk health system by mere logic of 'scientific' validity and superiority. A great deal is known about the processes involved in culture change to question propositions based on such assumptions.

People accept innovations selectively, after necessary modifications, in terms of their perceived needs and their assessment of the desirable and undesirable short-term consequences. In the process they adopt and reorient the form and meaning of the innovation in fitness with their group culture. The adoption of innovations does not necessarily mean an acceptance of the knowledge and the norms implicit in the innovations. It also does not mean that the alternative traditional modes become disfunctional. Kochar has theorized the following basic concepts[4] underlying the health behaviour of the rural population :

1. A pluralistic and pragmatic approach to the problem solving in order to optimize the perceived desirable outcome leading to the multiple utilization and/or shifting utilization modes without much concern for the logical or ideal contradictions involved.

2. Flexible, situation-specific and problem-specific choices for health action in tune with the perceived benefits and social costs (for utilization and compliance).

3. Socially stratified health behaviour, illness behaviour, and utiliza- profiles necessitating differential management strategies.

4. The learning and practice of the newly acquired skills for health care and prevention without the prerequisite knowledge base.

5. Awareness of the stigma attached by the professionals and the elite to the folk practices ('superstititious', 'stupid'), resulting in a verbal acceptance (and even advocacy) of the prestigious 'modern' modes. This results in concealment of the traditional modes actually practised and preferred under given circumstances.

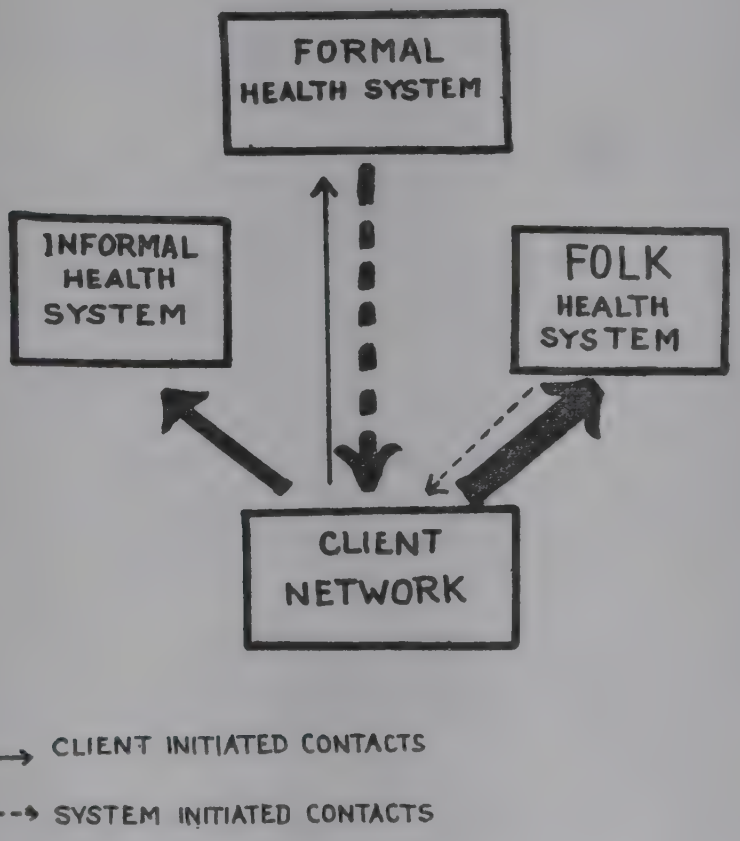
6. The differential preparedness of the rural communities and the ethnic groups for a selective acceptance and diffusion of health innovations due to the different developmental levels attained.

Health resources in rural India

As shown in the Diagram 1 three different types of health resources exist in rural India[5]. The formal health system consists of the governmental network of primary health centres (PHCs), sub-centres and dispensaries (the PHC complex). There are some units for other national programmes (e.g. family planning, tuberculosis, leprosy, etc.) which are in the process

of being integrated with the PHC complex. This system is highly formalised and is organized bureaucratically[6]. The informal health system consists of an open-market network of private clinics of the full-time private medical practitioners of various types. Sometimes there are non-governmental dispensaries and private rural hospitals too. There is no formal organization involved and the role are only informally inter-linked by the market economy, the peer groups and the professional associations. The folk health system consists of a variety of part-time health workers who function within the context of folk traditions and village organization[7,8,9]. Various aspects of these systems are discussed later.

Diagram No. 1.



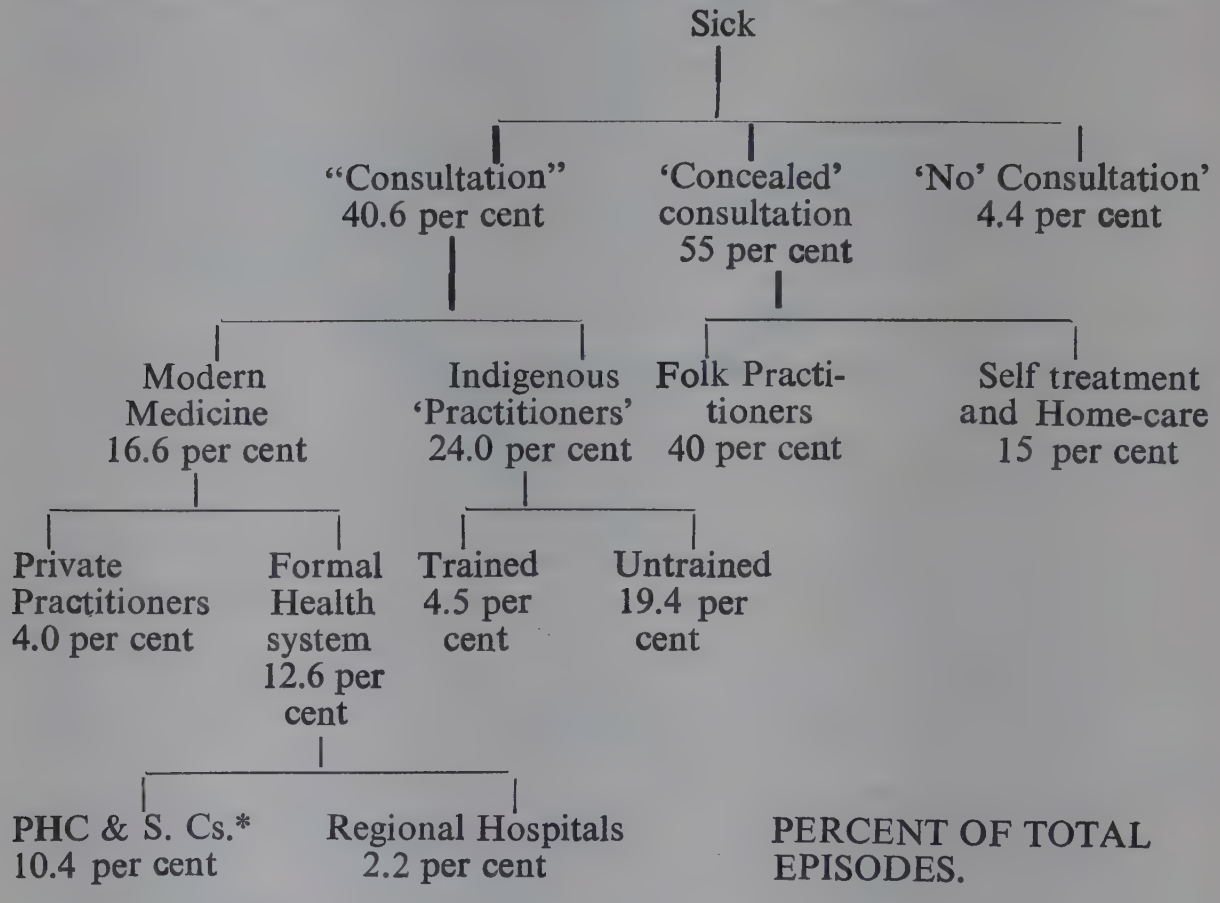
Health needs of the rural population

It is a valued axiom of planning that it should start with an assessment of the health needs and problems within the realistic setting of a given social milieu. The 'functional' evaluation of the health needs and health services is one such methodology[10,11]. It is based upon the demographic indicators, the morbidity data, the operational studies of health services, and the theoretical conventions (standards) recommended for the various types of health needs. The exercise unavoidably involves a number of assumptions and approximations. It is by definition a theoretical concept to deduce how much of the minimum needs of the rural population are being actually provided under an existing system of services, or are likely to be provided under a proposed alternative system of services.

Similar projections are being developed for a rural population near Varanasi for which some basic data are available[12,13,14]. Some important modifications in the method have been made to relate the assessment more realistically to (i) the differential accessibility of different rural groups for routine (clinic) approach in health programmes, (ii) the detailed inventory of the actual tasks anticipated within each function for primary care of simple and at risk cases, (iii) the requirement of additional service inputs to overcome socio-cultural barriers for the success of certain tasks, (iv) the overhead non-service inputs necessary for consistently sustaining a given level and quality of service output through the peripheral workers, and (v) the inputs for regular training, supervision, evaluation and supplies.

Diagram No. 2

DIFFERENTIAL USE OF VARIOUS TYPES OF PRACTITIONERS


Sick
"Consultation" 40.6 per cent
'Concealed' consultation 55 per cent
'No' Consultation' 4.4 per cent
Modern Medicine 16.6 per cent
Indigenous 'Practitioners' 24.0 per cent
Folk Practitioners 40 per cent
Self treatment and Home-care 15 per cent
Private Practitioners 4.0 per cent
Formal Health system 12.6 per cent
Trained 4.5 per cent
Untrained 19.4 per cent
PHC & S. Cs.* 10.4 per cent
Regional Hospitals 2.2 per cent
PERCENT OF TOTAL EPISODES.

*Sub Centres.

Adapted from :

Johns Hopkins Univ. 17

The tentative estimates show that service inputs equal to the work-load of three full-time peripheral 'low-level' workers are required for each village (1,000 population) to provide comprehensive care[15]. This is more than 15 times greater than the existing set up of one multipurpose health worker for 5,000 population.

The pattern of services implicit in these estimates is in general inferior to the pattern of services available to the most urban population[16]. The estimates envisage a very rudimentary pattern of services for some functions such as sanitation and health education. Even though this theoretical assessment is subject to revision and refinement, it highlights the magnitude of quantitative gap between the health needs of the rural population and the actual outreach of the existing services. This is well illustrated in the data presented in Table 1 derived from studies in Varanasi[13,17]. Table 2 shows how poor is the 'quality' of care by the health centre doctors themselves[17,18]. The quality of services rendered by the para-medicals is recognized to be generally very deficient. Some studies show that the knowledge, attitude and practice (KAP) base in the same among the para-medicals and the so-called indigenous practitioners[19,20,21,22].

Table 1—Health Centre Outreach.

(Including Sub-centres)	
Population never using PHC services	77.0 Per cent
Proportion of Morbidities attended	10.4 Per cent
Patients Beyond two miles	14.5 Per cent
Female Patients beyond two miles	8.4 Per cent
Proportion of infants covered by MCH Programmes	20.0 Per cent
Visits per infant (Yearly)	1.2 Per cent
Coverage of infants beyond two miles	9.0 Per cent
Coverage of Antenatal cases beyond two miles	7.3 Per cant
Deliveries beyond two miles	8.0 Per cent
Proportion of females patients in O.P.D.	33.7 Per cent

Data for Chiraigaon Block Study Area, Varanasi Distt

Based on :

Chakravarty[14], Rao *et al.*[13]

See also Chuttani and Nayak[23]

Table 2.—Health Centre Doctors.

Quality of Care	
Patients not getting physical examination	54.0 Per cent
Average Consultation Time	1.5 Minutes
Patients given no advice	81.0 Per cent
Diagnostic Tests	Few

75 per cent of PHC doctors want more than five minutes for consultation.

54 per cent of PHC doctors consider that curative services should constitute the highest priority.

Sources : Johns Hopkins University[17], Takulia and Taylor[18].

Limited out-reach of the proposed alternatives

Seen in this perspective, the alternatives being discussed provide only a marginal solution to the problems of bridging the gap between the quantum of needs and the quantum of outreach of the proposed programmes. Most projects do not provide concrete data about the quantum of services that are being provided or the proportion of the rural population that is being actually served satisfactorily for each function. In purely nutrition programmes like Poshak, with commendable planning and extensive controlled trials, not more than 20-40 per cent of the target (under three years, population could be reached. In Miraj project, another well organized project, the female multipurpose workers would get less than 6.3 minutes per household and the male workers would get less than nine minutes per household for their monthly household visits for a total coverage. During these brief durations, which include time for preparation, introduction, updating records, travel etc., the workers must complete the detailed list comprehensive multi-purpose tasks running into two pages each. The Kasa project, which is primarily a nutrition project, is based upon the use of part-time peripheral workers in addition to the regular PHC field staff. In this project only about 12.3 per cent of the target (under five years) population (or about four per cent of the total population) is being reached. Some other projects make inflated claims or make unrealistic targets much beyond the absolute capacity of the given personnel inputs.

Health roles and resources in rural India

For an adequate planning the roles and resources in all the three systems mentioned above should be kept in view. Table 3 presents a rough

Table 3.—Population of practitioners in a Block (Estimated).

	Formal health system	Informal health system		Folk health system
		Modern	Other	
Professionals				
Modern	2	2	—	—
Other	—	—	8	—
Sub-Professionls and Pseudo-Professionals	—	3	28	—
Para Medicals	40-50	—	—	—
Folk Practitioners	—	—	—	600

Sources :

Report 1966. Indian Institute of Manpower Research.

Johns Hopkins University[17]

Govt. of India. Fifth five year Plan draft.

generalised estimate of the relative abundance of man-power in the different systems. The formal health system has a fairly standardized staffing pattern although there are some regional variations[6,20]. Two doctors supported by teams of about 30-50 paramedicals, auxiliaries and aides serve a block population of about one lakh. Various paramedicals are currently being converted into multipurpose workers.

The informal health system of the full-time private practitioners has, on all India basis (1970 data), about 40 full-time professionals, and pseudo-professionals per block (about one lakh population). Of these only four or five are allopaths and the rest are the so-called 'indigenous medical practitioners'. There is no indication available of the supportive staff used by the private practitioners except that such helping hands are often used.

The folk health system includes a variety of health roles that can be classified in four categories :

1. *The folk practitioners :* They engage in some form of naturalistic medicational treatment on regular basis to their village communities. Some of them (*Vaid, Kobiraj, Ojha, Bhagat*, etc.) are generalists and some are specialists (such as *dai, nain*, bone-setter, snake bite curer, etc).
2. *The folk healers :* They confine to magico-religious curative and preventive practices.
3. *The allied health occupations :* They traditionally engage in health related sanitational, educational, or promotive activities without any curative functions (such as barber, sweeper, leatherworker, teacher, wrestler etc).
4. *The family practitioners :* They not only informally advise care and treatment to their family, neighbourhood and caste members but they also play an important part in decision making process for management of illness, referral, illness behaviour and compliance. More successful among them become folk practitioners.

The number of so-called Indigenous Medical Practitioners (IMPs) is a legion. The published studies report conflicting estimates on account of varying definitions, stated or implicit. Studies also suggest regional variations. The studies carried out by the National Institute of Health Administration and Education (NIHAE) made a conservative estimates of 0.1 to 2.0 Indigenous Medical Practitioners per village depending upon the region studied. That these are incomplete estimates is revealed by the fact that a survey in 58 villages in a Maharashtra region identified 3.2 *dais* alone per village[23]. Another study in Maharashtra identified 2.4 *bhagats*

alone per village[24]. A survey in Mysore[19] found 14-15 Indigenous Medical Practitioners per village in a group of nine villages. Kochar[25] found the same number in a group of villages in West-Bengal. Another survey in Mysore[26] estimated 656 'part-time' practitioners in a Taluk. The Narangwal study in Punjab[17] cited 600 part-time villages practitioners within a block, apart from qualified and unqualified full-time Indigenous Medical Practitioners. A published account, however, cites only 300 such practitioners per block. An on-going study in 10 villages near Varanasi has identified 300 practitioners.

It may be assumed here that a village (of 1000 populatian), on the average, is expected to have five to seven well recognized folk practitioners (not including the folk healers, and the allied health roles). As will be seen in Table 3 this man-power is many times larger than the man-power within the other systems (about 86 per cent of the total).

Private medical practitioner and folk practitioners

The term 'Indigenous Medical Practitioners' has numerous epistemological problems[27'28'29]. Consequently it has been grossly misused in the literature. This is a good example how a term used by foreign prestigious sources is accepted and used uncritically. Instead, the term 'Private Medical Practitioners' (PMPs) is used here. PMPs are full time qualified and/or registered medical practitioners of all types who function within the informal health system. Two types of PMPs are noted above—the professionals (trained and qualified) and pseudo-professional (unqualified or improperly qualified but registered). They can be further distinguished by the type of medicine system they learn and/or practice. The practitioners in Indian Medicine (PIMs) constitute a large proportion of PMP population in rural areas (Table 3). The role of PMPs is validated by economic viability in the open market and by peer recognition. They are regulated by the market or business conventions and also by the Professional conventions set by the professional bodies and/or registering agencies. The PIMs are supposed to practise within the framework of the textual cannons and materials supposedly independent of magico-religious overtones. In parlance of social anthropology the practitioners in Indian medicine represent the great tradition which has had its roots in cities[28'29]. Their code of practice are cannonized/standardized and generally acquired after prolonged apprenticeship with well known practitioners, because interpretation and understanding of highly cryptic texts required this[30]. Some practitioners in Indian medicine are fairly professionalized[31] and some of them are, in many respects, as puritan, sectarian and conservative as the professionals in the modern medicine[32]. However, many less professionalized PIMs have of late started acquiring modern medical knowledge and skills both through integrated training and through informal learning[27'32'33'].

The folk practitioners, although sometimes referred to as 'Vaid' belong to the local folk traditions of the village communities[8]. The folk practitioners are part-time, non-registered, practitioners functioning within the context of village organization (network of socio-economic-political ties). Their role is validated by social recognition and regulated by the community conventions, the caste and village leadership. The kinship, caste relationships play an important part in such regulation[9,34,35,36,37]. The folk practitioners administer simple folk medicines and remedies to a body of clients on regular basis. In return they receive some form of direct or indirect remuneration. They have some other occupation as their mainstay. Social recognition and prestige are the major rewards. They function in the context of local oral folk traditions and local health culture with heavy magico-religious overtones. They share some basic concepts with *Ayurved* system, but there is much in their practice which *Ayurveds* will disapprove. Some may emulate real *vaidya* or a doctor and occasionally establish themselves as full-time practitioners. Despite cultural borrowing and overlap, the practitioners in Indian medicine systems and the folk practioners are two distinct categories.

Who meets the health demands of the rural population

All these systems fulfil the health demands of the rural population to a varying degree. Here again, the available information gives varying estimates on account of inconsistent definitions and criteria used for 'episode' 'consultation', 'utilization', 'treatment' etc. The Narangwal studies[17] in a progressive and well developed region of Punjab show that only 10-12 per cent of the episodes are served by the formal health system. A study in Varanasi arrived at a similar estimate[13]. About eight per cent of the episodes go to the qualified/registered practitioners within the informal health system, and 20 per cent go to the unqualified practitioners in Indian medicine. The study reports 'non-consultation' in case of 59 per cent of episodes. This is rather high non-consultation rate considering the fact the average duration of the recorded episodes was above 30 days. A survey in Mysore[19] using a different definition and criteria found that only 25 per cent of the episodes did not lead to any 'treatment'. In an exploratory study in West Bengal, Kochar[25] found that only four per cent of the episodes did not lead to any form of health action (which included home remedies).

Better data on this aspect are needed. Here it may be assumed that only the short-term episodes of less than three days (about 29 per cent Narangwal data) do not lead to a consultation with any type of practitioner. The remaining 40 per cent in the non-consultation group in the Narangwal data are assumed to be consulting folk practitioners. The folk health system thus caters for about 75 per cent of the episodes. Similar estimates

from the less developed regions and remote rural areas, where the private practitioners are fewer, may be expected to show even higher utilization of folk practitioners.

Economic support behind the three systems

Money spent by the government and money spent by the population are the two major sources supporting various health roles and health services in rural areas. Only a very small proportion are supported by the non-governmental agencies in rural areas. There is no definite information about the governmental expenditure on health in rural areas. If the total budgetary allocations for PHCs are any indication, it is probably less than one rupee per capita per year (excluding non-service capital expenses on construction of building and transport). In contrast to this, a study in Andhra[38] indicates a per capita personal health expenditure of Rs. 13/- per year. The Narangwal[17,27] study which under-estimated utilization and consultation rate for the folk practitioners, reports an expenditure of Rs. 6/- per capita per year (1965-66 data base). The Andhra estimate works out to an impressive sum of Rs. 1,083/- per village per month. This paper does not indicate allocation by practitioner types but reports expenses by income levels. If it is assumed that the high income groups (19 per cent with per capita income of more than 600 rupees) spend most on private medical practitioners and the low income groups (57 per cent with per capita income less than 400 rupees) use the folk practitioner, a rough estimate can be derived. About 70-80 per cent of the per capita personal expenditure on health is assumed to go to the folk practitioners (roughly Rs. 10/- per capita against Rs. 3/- per capita going to PMPs). The economic support to the folk health system is roughly about ten times larger than the economic support to the formal health system.

Strengths and weaknesses of the folk health system

The folk health system is thus a viable going concern. In comparison to the formal health system it has many advantages. It has more than ten times larger man-power base, it has about 10 time larger economic support and it serves about seven to eight times larger curative demand of the rural population. There is one folk practitioner available for 200 population while the formal health system operates on 1 : 5000 ratio at the most peripheral level. While the whole teams of indigenous barefoot doctors exist and serve in each village in India the health planning bodies in Delhi are searching for the possibility of using the 'Chinese type barefoot doctors'. The folk health system as people's health system has served the rural population for thousands of years and still serves in many different ways.

The folk health system has deep roots in the local culture. The folk practitioners know their clients and their problems personally. They

understand why people do what they do. The formal health system is, however, completely alineated from the local culture. Their services are rendered in the context of social annonymity and cultural negativism. The folk health system filters down to each family. The folk practitioners are the gatekeepers of the local health culture. Through their practice they dramatise and reinforce health beliefs, attitudes and habits. They are in position to influence the health behaviour of their clients. The roles within the formal health system do not understand the health action and behaviour of their clients and have but little influence upon them.

Analogous to continuity between the great and little traditions, there is a conceptual and operational continuity between the folk health system and the *Ayurvedic* system of medicine. The family medicine of villages can be viewed as *Ayurvedic* medicine simplified and adapted to the local needs and conditions. The process of diffusion and cultural adaptation of scientific medical knowledge and practice has also begun[27]. The folk health system is sensitive to various other changes and developments in the villages. In response, the health roles are changing and practices are being modified. In the formal health system the question of adaptation of modern medicine to the local conditions, or to other medical systems has not even been conceived of.

The organization of folk health system meets five of the seven basic principles laid down in the World Health Organization (WHO) Director General's report on Promotion of National Health Services to the 55th session of the Executive Board in 1975[39] : (i) Primary care is shaped around the life pattern of the target population, (ii) services are in line with the local needs and priorities evolved by local participation in health care activities, (iii) services rely on available local resources, (iv) intervention is through most peripheral level, and (v) services are integrated with other sectors of community development. The two criteria that it does not meet are : Higher achleons are designed to support this peripheral network ; and integrated primary care approach. The formal health system meets only the last criterion in principle, if not in practice.

Although the concept and value of prevention and promotion is strongly emphasized in the folk health cultures as well as in the Indian medicine[30,40], the services given by the folk practitioners are largely curative. The pattern and content of the services are rich in behavioural and dietary regimentation but are extremely deficient in knowledge and skills. The reasons for this are : (i) the lack of supportive vertical supra-structure and lack of any linkage leading to higher achleons of expertise, technology and other health resources, (ii) the poor knowledge and technology base due to complete lack of any training, (iii) a complete lack of any formal control,

supervision and regulation ; (iv) the lack of any direct involvement in the national health programme and (v) the premium value of curative skills and specialities perpetuated by the professional culture.

The services rendered by the folk practitioners are very elementary with strong admixture of ethics, rituals and magic. There are many dubious practices and some are outright dangerous to the community. Folk practitioners have very limited functions in contrast to the concept of multipurpose roles in the formal health system. The services of the folk practitioners are open to undesirable socio-economic discrimination inherent in the heirarchially stratified social system. Their roles are subject to changing caste and occupational ramifications. However, if other roles such as teachers, youths, leaders, etc. can be combined with them many of the disadvantages can be overcome. The shortcomings of the folk practitioners appear to be more because of the neglect and non-involvement in the mainstream of the health programmes and less because of any inherent incapacities to learn, change and accept controls.

Why strengthen folk health system ?

The following are the main advantages of involving folk health system in the national health programmes :

1. It has enormous man-power of health roles supported by the village communities, i.e. available almost free of cost.
2. It can provide intensive service inputs for simple routines urgently needed such as for timely registration, for field contacts, follow up, routine checks, seeking out reluctant beneficiaries, and problem-solving for preventive programmes.
3. It is virtually a ready-made peripheral delivery system which can possibly meet all of the WHO criteria if it is properly reorganized and integrated with the PHC complex.
4. It can provide a highly effective link with the community and culture, an objective that has proved illusive so far.
5. With proper working relationship it can help resolve medico-cultural conflicts into which the health programmes run often.
6. With an intimate understanding of the personal problems, habits, perception and choices of their clients they can undertake the difficult task of promoting utilization participation, timely referral and compliance to given set of recommendations.
7. Planned changes in the knowledge and practices of the folk practitioners can act as catalyst health related social change.
8. It will improve the performance and reduce the risks of folk practitioners.

9. The involvement of folk practitioners will provide a possibility of some control over epidemiological risk factors emerging from harmful practices. Through controlled diffusion of new knowledge and practices the dangers of uncontrolled diffusion of modern drugs can be regulated. Also, more of preventive and promotive aspects can be introduced instead of purely curative diffusion.

10. The potential of folk practitioners for learning desired skills, their participation as volunteers, facilitators, promoters and aides can greatly enhance the outreach and output of the field staff in PHC complex[41].

The proposal

To summarise, the proposal for strengthening the folk health system rests on two sequential objectives :

1. To strengthen the folk health system, as the peoples' only recourse for health care in remote rural areas, in order to maximize its benefits and minimize its risks.

2. Suitably reorganized folk health system should be integrated with the formal health system as a peripheral network in order to maximize its outreach for comprehensive primary care in the remote rural areas.

The first objective in itself does not necessarily assume that the second must be done. But the second objective would logically come after the mechanics of the first objective are established. To achieve the second objective the first objective should be accomplished in such a manner that would allow : (i) two way flow of information and materials, (ii) periodic education of folk practitioners on the basis of pre-planned materials and methods, (iii) change in the pattern of services delivered by them. (iv) some regulation and control on the activities of some folk practitioners, (v) smooth working relationship with the roles and operations of the PHC field staff. (vi) involvement of other significant roles such as teachers, youths, leaders, etc. and (vii) Organization and operation of training and action programmes by multipurpose health worker with minimal direct involvement of the professional staff.

The second objective also necessitates fundamental changes within the PHC system itself. This would constitute the third objective of the proposal. As envisaged in the WHO guidelines, the PHC system linked with the district hospitals in three tier system, according to the proposal, will primarily become a back-up or supportive supra-structure rather than a delivery system as it is now. The important supportive functions would

include education and training of the folk practitioners and others ; planning, organization and supervision of the village level programmes run by the selected peripheral workers ; supply of materials, information, instructions, guidelines ; effective two-way referral and follow-up ; assemblage, up-dating and coordination of routine records ; evaluation of training as well as of service programmes run by the peripheral workers ; fact-finding, problem-solving and cost-effective decision making exercises necessary for any of these activities or functions ; effective community participation and health change. In addition, the PHC complex will provide limited selective services for which the peripheral workers are not properly prepared. In substance, the PHC complex will tune itself to getting things done through the peripheral system and three-tier system rather than doing them itself.

Feasibility of the proposal

The idea of primary health care through low-level peripheral workers has received would wide attention and a good deal of expertise has been developed[41–48]. These researches and action programmes amply demonstrate the feasibility of this idea in widely different cultural regions. The question often posed, 'Can this be done', ? is well answered by referring to these numerous experimental programmes in India and abroad, particularly in Africa, Latin America and South-East Asia. The use of folk practitioners[49,50,51] as peripheral workers, alone with other roles, is a logical extension of this now well established approach of primary care through peripheral workers. While there is a good deal of evidence that it is possible and profitable, there is no evidence which proves that it can not be done. Specific administrative, organizational and operational problems, in the use of such peripheral workers, such as those pertaining to learning, supervision and control, quality of care, type and level of involvement, etc., will have to be examined and resolved through action programmes.

Needed follow up action

A leap from an idea to a programme is a difficult one. The proposal of strengthening and reorganising folk health system will have to be worked out piece by piece by *ad-hoc* experiments and controlled trials. Kochar has developed further project details in three different phases. (i) Exploratory experimentation, baseline studies and material development (manuals for training and action programme), (ii) remote-controlled pilot phase to test replicability and (iii) consolidation phase to develop a blue print for large-scale replication.

Action programme is a human machine to produce certain services of certain quality in certain number, within given time, for a given population. A blue-print for a human machine, i.e. the programme, should operationalise every important event or activity, sequence by sequence, and specify

'what to do and how to do' details for each activity and role involved in the programme such as those available for programmed teaching in occupational skills and roles[51'52]. This necessitates preparation of carefully developed and pretested manuals and package incorporating necessary training and action materials, procedures and methods, instructions and guidelines, evaluation and quality control mechanisms for step-by-step routine activities involved in each operation of a programme. The methodology[53] of manualized instructional materials and packages[54'55'56] transmitted through non-formal and functional education techniques[57'58] is recommended for this approach. The preparation and testing of these packages (such as those prepared by National Council of Educational Research and Training for formal education) will require heavy inputs by the experts in various interdisciplines involved, but once prepared, these will avoid the necessity of involving professionals during the action programmes. This methodology is crucial if the multipurpose health worker is to act as an educator and supervisor for the folk practitioners who in turn are to act as the actors or agents for actually conducting the routine primary care activities in villages, as per a pre-planned schedule, under the overall control of PHC complex.

References

1. Polgar, S. (1962). Health and Human Behavior, *Current Anthropology*, **3** : 165.
2. Mars, G. (1975). A Social Anthropological Approach to Health Problems in Developing Countries. In Ciba Foundation, "*Health and Industrial Growth*", Elsevier, Holland. 219-235.
3. Unschuld, P. U. (1975). Medico-cultural Conflicts in Asian Setting : An Explanatory Theory. *Soc. Sci. Med.*, **9** : 303-312.
4. Kochar, V. (1976). An Exploratory Study of Health Roles in a Rural Area near Varanasi. *Unpublished working document* of the on-going ICSSR Project, Department of PSM, Institute of Medical Sciences, Banaras Hindu University.
5. Kochar, V. (1973). Social Organization of Health Roles and Resources in Rural India. *Unpublished paper* presented at a seminar, Department of Behavioural Sciences, Johns Hopkins University, Baltimore.
6. Annonymous. (1967). *Job Descriptions of Personnel in PHC* Chandigarh.
7. Beals, A. R. (1976). Strategies of Resort to Curers in South India. In Charles Leslie (ed), *Asian Medical Systems*. University of California Press, Berkeley.
8. Leslie, C. (1967). Professional and Popular Health Cultures in South Asia : Needed Research in Medical Sociology and Anthropology. In *Understanding Science and Technology in India and Pakistan*. New York State University Press, New York.
9. Khare, R. S. (1963). Folk Medicine in a North Indian Village. *Human Organization*, **22** : 36-40.
10. Parker, R. L., et al. (1972). Relating Health Services to Community Health Needs. *Indian J. Med. Res.*, **60** : 1835.

11. Rienke, W. A., et al. (1972). Functional Analysis of Health Needs and Services. *Proceedings, VI International Scientific Meeting, International Epidemiological Association,* Yugoslavia.

12. Rao, N. S. N., et al. (1973). Disabilities Morbidity and Mortality in a Community Development Block. *Indian Med. Sci.,* **27** : 513.

13. Rao, N. S. N., et al. *Under preparation.*

14. Chakravarty, M. K. (1972). Study of the Working of the PHC Chriagaon Block *M. D. Thesis,* Dept. of PSM, Institute of Medical Sciences, BHU.

15. Kochar, V., et al. *Under preparation.* A Realistic Assessment of the Health Service Needs of the Rural Population.

16. Govt. of India, ed. *CGHS Annual Report for* 1968-69. New Delhi. Also see *E. S. I. Annual Report* 1970-71.

17. Johns Hopkins University, (1970). *Functional Analysis of Health Needs and Services.* Memeographed. Department of International Health, School of Hygiene and Public Health, Baltimore.

18. Takulia, H. S., and Taylor, C. E. (1967). *Health Centre Doctor.* Johns Hopkins Press, Baltimore.

19. Andrews, S. (1973). *Feasibility of Involving Indigenous Medical Practitioner for Family Planning Services Delivery in Kerala, India.* Dr. P. H. thesis, School of Hygiene and Public Health, Johns Hopkins University, Baltimore.

20. Government of India, (1973). *Report of the Committee on Multipurpose workers under Health and Family Planning Programme,* New Delhi. p. 7.

21. Chuttani, C. S., et al. (1973). A Survey of IMPs in Rural Areas of Five different States in India. *Indian Med. Res.,* **61** : 962-967.

22. Chuttani, C. S. and Nayak, M. D. (1976). A Quantitative and Qualitative assessment of MCH Services etc. *Indian Prev. Soc. Med.,* **7** : 15-20.

23. Ram, E. (1976). Intergrated Health Services Project, Miraj. Personal Communication.

24. Shah, P. M. (1976). The Kasa Model Personal Communication.

25. Kochar, V. (1975). *Human Factors in the Ecology and Epidemiology of Hookworm Infection in rural W. Bengal.,* D. Sc. thesis, School of Hygiene and Public Health, Johns Hopkins University, Baltimore.

26. Alexander, C. A. and Shivaswami, M. K. (1971). Traditional Healers in a Region of Mysore (India). *Social Science and Medicine,* **5** : 595-601.

27. Taylor, C. E. (1976). The Place of Indigenous Medical Practitioners in the Modernization of Health Services. In Charles Leslie (ed.), *Asian Medical Systems,* Univ. Calif. Press. Berkeley. 285-299.

28. Redfield, R. (1955). The Social Organization of Tradition. *For Eastern Qualtery* **15** : 13-21.

29. Leslie, C. (1976). Introduction. in *Asian Medical Systems.* Univ. Calif. Press, Barkley.

30. Basham, A. I. (1976). The Practice of Medicine in Ancient and Medical India. in Charles Leslie (ed.) *Asian Medical Systems,* 18-43.

31. Leslie, C. (1968). The Professionalization of Ayurvedic and Unani Medicine. *Transactions of N. Y. Academy of Sciences,* Ser. II **30** : 559-572.

32. Bhatia, J. C., et al. (1975). Traditional Healers and Modern Medicine. *Soc. Sci., Med.* **9** : 15-21.

33. Neumann, A. K., et al. (1971). Role of Indigenous Medicine Practitioners in two areas of India—Report of a Study. *Soc. Sci. Med.*, **5** : 137-149.

34. Marriott, M. (1955). Western Medicine in a village of Northern India. In Paul B. F. (ed) *Health Culture and Community.* New York.

35. Carstairs, G. M. (1955). Medicine and Faith in Rural Rajasthan. in Paul, B.D. (ed.) *Health Culture and Community.* Russel Sage Foundation. New York.

36. Gould, H.A. (1965). Modern Medicine and Folk cognition in rural India. *Human Organiza.*, **24** : 201-208.

37. Hasan, K. A. (1967). *The Cultural Frontier of Health in* village India. Manaktalas : Bombay.

38. Rao, P. S. S., et al. (1973). Personal Health Expenses among rural communities of North Arcot District. *Ind. J. Med. Res.*, **61** : 1100-1111.

39. W.H.O. Document EB 57-20, 6 November 1975.

40. Dunn, F. (1976). Traditional Asian Medicine and Cosmopolitan Medicine as Adaptive Systems. In C. Leslie (ed) *Asian Medical System.* N. Y. pp. 133–158.

41. Ciba Symposium. (1970). *Team Work for world Health*, London, Churchill.

42. Newell, K. W. (1975). *Health by the People. W.H.O.*, Geneva.

43. Akhtar, S. (1975). *Low cost rural health care and manpower training* (an annotated bibliography). International Development Research Centre, Ottawa.

44. Djukanovic, V. and Mach, E. P. (1975). *Alternative approaches to meeting Basic Health Needs in Developing countries.* WHO, Geneva.

45. WHO. periodic. *Register of Health Services Development* Projects. Geneva.

46. WHO. (1974). Training and Utilization of Village Health Workers : A program to improve the delivery of health services at the peripheral level. *WHO document* HND/74.5.

47. PAHO. (1975). Seminar on Utilization of Health auxiliary Personnel and community leaders for health programs in rural areas. *PAHO Scientific Document* 296, Washington.

48. WHO (1975). Inter-country seminar on Peripheral Medical Care Services. *WHO Regional Office for South East Asia.*

49. Peng, J. Y. et al. (1973). *Role of traditional birth attendants for Family Planning.* Ottawa

50. Rogers, M. and Solomon, D. S. (1975). *Traditional Midwives, for Family Planning Communication in Asia.* Honolulu : East-west Centre.

51. Ofiesh, G.D. (1965). *Programmed Instruction : A Guide for* Management. Washington.

52. Ellson, D. G. et al. (1973). *Effective teaching by unqualified teachers.* SEAMO Regional Centre for Educational Innovation and Technology, Singapore.

53. King, M. H. and Kingh, F. A. M. (1975). Micro Health Planning and the Health Care Package. In J. Myer (ed) *Priorities in Child Nutrition.* Vol. UNESCO.

54. King, M.H. (1975). *Manual on Primary Child Care.* WHO.

55. Fountain, D. *A. Manual for Medical Assistants.* Memo. Kinshasa.

56. Annonymous. nd. *Barefoot Doctor's Mannual,* Washington DC.

57. UNESCO (1973). *The training of Functional Literacy Personnel : A Practical Guide.* Paris.

58. Ahmed, M. and Coombs, P. H. (1975). *Education for Rural Development,* Praeger, New York.

Part B

Review of Ongoing Projects on Alternatives to Health Care System

ONGOING PROJECTS ON ALTERNATIVES TO THE HEALTH CARE DELIVERY SYSTEM

KAMALA GOPAL RAO*

In the Symposium several projects and experiments on alternatives to the health care delivery system were presented. These were broadly classified into four areas : Projects with a predominant component of nutrition and MCH, comprehensive health care projects, projects based on a self-sustaining system of health cooperatives and hospital based projects, working with the community through the hospitals. In the course of the collection of information on the projects reported in the symposium, a few other experiments going on in different parts of the country came to light. Although no comprehensive and full reports are available on these projects, as they are of a fairly recent origin, it was felt that a small abstract giving some essential points about each project is worthwhile as a piece of information for those interested in knowing about such projects, and for those who wish to follow up such efforts. With this end in view a few summaries have been presented without any attempt to classify the information in any specified analytical framework.

1. The Okhla neighbourhood comprehensive health and welfare project

This project initiated in 1975 is an extension activity of the Holy Family Hospital at Delhi and aims at a comprehensive development of the immediate neighbourhood of participating institutions and to provide total family care through an integrated community welfare, social welfare and educational service. The project covers about 2,500 families in 11 villages surrounding the hospital. Local multipurpose health workers are trained among the village folk. Volunteer women are trained in first-aid and home nursing, and no rigid basic educational requirements are prescribed. Training is for six months and classes are held twice a week in their homes. The project has developed a detailed syllabus and a total of 14 women have been trained so far. They are given a first-aid kit and an honoraria of Rs. 50 per month. Thrice a week they come to the clinic and give health talks and demonstration. On other days they do home visiting. One health visitor is incharge of the health workers. The project is on going.

*Dr. (Mrs) Kamla Gopal Rao, Professor and Head of Department of Social Sciences, National Institute of Health Administration and Education, E-16, Greater Kailash, New Delhi.

2. Comprehensive health care project of the Deenabandhu Medical Mission, Tamilnadu

This project which started in 1975 covers a rural population of 20,000 and offers a wide range of comprehensive health care services including child health, nutrition, general medical care, preventive care and communicable diseases. Using the basic hospital for referral, investigation, surgical and inpatient care, the project had its baseline survey in 1973 and has trained different community workers like Village Health Workers (VHWs), *dais* and young farmers. It has economic upliftment activities built into it and over a five year period seeks to become self supporting through a health insurance scheme.

3. The village health worker taining scheme project

Initiated in March, 1976 after a baseline survey, this project covers four villages in Chichurpura area in Anantnag district, Kashmir. Actual population coverage is 3,146 (480 families). It aims at improvement of general health in villages, and reduction of maternal and infant mortality, through the training and use of VHWs. A purely voluntary effort, the scheme operates in close collaboration with the John Bishop Memorial at Anantnag. A total of five VHWs have been trained, and given some simple drugs and dressings and bandages. The VHW's work is to collect children for immunization and pregnant women for antenatal checks and to do school visits for health check up, education on nutrition and hygiene. Each worker covers about 150 to 1,360 population depending upon the size of the village.

4. The Senathan village project in Anantnag

Started in 1974, is covering a population of 955. The same hospital as mentioned in the above project provides the operational, training and referrel inpatient base for this project also. Scope of service include primary medical care, health education at health centre at school, immunisation, antenatal and postnatal service and family planning. But for supply of vaccines from the government, the project is purely voluntary. One trained Auxiliary Nurse Midwife (ANM) is incharge, supervised by the hospital doctor, once a week. The village headman has provided two rooms in his house for the health centre where ANM works and provides escort for the nurse.

5. Family Survival Assurance Plan—A Pilot Project of Christian Medical Association of India

The Family Survival Assurance Plan is based on the assumption that assuring survival of living children will encourage eligible couples to accept family planning. It seeks to test the effect of community health care through hospitals on family limitation.

It is an action-oriented and hospital-based proposal designed for a period of four years to help the selected families to gradually build up a permanent link with the hospital. In the first phase the families are expected to pay a minimum yearly sum approximating to one-tenth of the cost of expense involved in the minimum health care and immunisation programme designed for them. According to the effectivness of the diffusion process, other familes who are influenced by the education programme may come forward spontaneously to be included in a plan of this kind.

The chief features of this programme are as follows :

1. Selecting an experimental area near the hospital where after making a baseline survey, 100 families of eligible couples and children below five years are chosen;

2. A control area similar to the experimental area with 100 families are selected on the same criteria adopted for the experimental area;

3. Establishing an ANM/Nurse in the experimental area to give domiciliary and child care services including family planning;

4. Emphasis on antenatal care, delivery, postnatal care, immunization of children below five years, tetanus toxoid to pregnant women, minimal medical care and nutrition education;

5. The selected families to contribute Rs. 15 annually towards minimal medical care;

6. Vaccines for immunization to the extent possible to be obtained from governmental agencies;

7. Nutrition education by finding out locally available, cheap nutritious food and giving demonstrations using acceptable recipes.

The programme has been initiated in seven hospitals.

In addition to the broad programme, the project specified the following performance objectives for the experimental area;

(i) Achieve 15 per cent acceptor rate for contraceptives in the first year, to be sustained with an additional 10 per cent each succeeding year;

(ii) Reduction in birth rate of experimental population by 10 per cent each year.

In maternal health

(i) 100 per cent registration of pregnant women each year and 80 per cent of these to undergo antenatal examination.

(ii) 100 per cent of pregnant women receiving tetanus toxoid.

(iii) 100 per cent deliveries to be done by trained persons—hospital nurse, ANM, trained *dai*.

(iv) 100 per cent wome in postnatal period to be visited at least once between tenth end fortieth day after delivery.

(v) Preventable maternal mortality zero every year.

Care of preschool children

(i) Reduction in infant mortality rate by 20/1000 per year compared to the control area.

(ii) Nutrition improvement as measured by 20 per cent children attaining the ideal weight.

(iii) Immunization of 80 per cent of preschool children per year (BCG, DPT, Polio and smallpox).

Minimum medical care

The project was initiated in four hospitals at different months in 1972 and terminal evaluation was done in 1976. The hospitals are Evangeline Booth Hospital, Ahmednagar, Maharashtra; The Philadelphia Hospital in Haryana, Bethesda Hospital, Ambur, Tamilnadu and Mundakapadam Mandiram Hospital, Kerala. Evaluation data on common parameters are available for three hospitals, except the Bethesda hospital. The achievements are therefore given for three hospitals only.

	A	B	C
Service coverage	*Evangeline Booth hospital (Maharashtra)*	*Philadelphia hospital (Haryana)*	*Mundakapadam hospital (Kerala)*
Antenatal visit (Per cent)	80	80	120
Tetanus toxoid to pregnant women	Data not available	Less than 50 per cent	80 per cent
Post-natal follow-up (Per cent)	100	100	100
Infant mortality rate	0 in 1974-75	87/1000 in 1975	Rise in infant mortality rate from 1974 to 1975
Materal death	0	Data not available	Data not available
immunizations (Per cent)	80	100	100
Family planning acceptance rate (Per cent)	60 above the target	8 above the target	16 above the target
Reduction in fertility (Per cent)	24 from 1973 to 1974 and 15.8 from 1974 to 1975	43 reduction from 1973 to 74 and slight increase from 1974-75	50 from 1973-74 and 33 in 1974-75

Failure to implement/complete the prescribed programme were noted in the following areas;

(i) Data on tetanus toxoid administration not properly maintained (Hospital A).

(ii) Failure to conduct attitude survey of the community as per plan due to not receiving schedules from the central office (Hospital A, B, C).

(iii) Nutrition education and demonstration programme not carried out as per schedule (Hospital B).

(iv) Failure on the part of programme staff to realise contributions from families (all three hospitals).

6. Use of school teachers by the Education Department, Government of Nagaland

In Nagaland, the Education Department is training primary school teachers for running medical Centres in the villages. The teachers are called for selection test and interview conducted by the Deputy Commissioners in the district headquarters. The minimum qualification of the teachers appearing for the test is class VIII pass. The successful candidates are trained at the Para-Medical Training Institute, Kohima. The teachers on completion of the course successfully are paid a special pay of Rs. 50/- per month each, for running of the village medical centres supported by the Government.

Since the existing teaching staff of the Para-Medical Training Institute cannot cope with the work, guest speakers, from the health units are invited on payment of honoraria of Rs. 25 per lecture for teaching the trainees from the Rural Development Department. The Para-Medical Training Centre conducts both written and practical examination at the end of the training and the successful candidates are awarded completion certificates. Thus the Medical Department evaluate their performance only at the end of the course.

Curriculum and Programme—The programme is to conduct training in seven batches for a period of 90 working hours in each batch. The following subjects are covered during the training : Introduction and outline of the subject, wounds dressing, respiration, shock, burns, bandage, etc.

Duration of course—one month.

Medicines supplied to the trainees after completion of the training are :—Tab. A.P.C., Tab. Influenza, Tab. Gelusil, Tab. Sulphaguanidine, Tr. Benzoine Co., Dettol, Cotton Wool, traingular bandage, rolled bandage of different sizes, finger bandage, one thermometer, (clinical) vaseline and a canvas bag.

So for 213 teachers have been trained in the five batches under this programme.

7. School teachers as agents (Rehbar—I—Sehat) for community health work—A pilot project in Jammu and Kashmir

In 1976, Government of Jammu and Kashmir started some pilot projects, one each in the region of Srinagar and Jammu for using school teachers for delivery of health care. In January 1976, from Gandherbal block of district Srinagar, 152 teachers were selected for training. In May 1976 another batch of 78 teachers was selected from Kotbalwal block of Jammu District for training. It was decided to designate these teachers as *Rehbar-i-Sehat* (Health guides). Role of the teacher was visualized in the promotion of health, early detection, first-aid, referral of cases and health education. The syllabus for the training of teachers was evloved to cover the following topic :—Environmental sanitation, nutrition, MCH and family planning, common communicable diseases with some idea about national control/eradication programmes, school health, personal hygiene, immunisation and health education. Background material in the shape of a handbook was prepared for the training of these health guides.

Duties of the teacher

1. Render general health education to the public about common health problems.
2. Refer various cases to the appropriate health institutions.
3. Assist and help in national health programmes.
4. Develop school health programme.
5. Participation in village health working group.
6. Render preliminary first aid as well as curative treatment of common illnesses.

Teachers do health work only after duty hours in school so that the education of children is not affected adversely. It cannot be strictly a formal duty but rather an informal type of work to be done in the village in the mornings, evenings and holidays. As the main duty of *Rehbar-i-sehat* is health education it is expected that he will educate people about various health topics and convince them about the desirability of cooperation with health agencies in making various national health programmes successful. He will especially concentrate on village leaders, elderly people and students. The duration of the training period was kept three months. It included theory and practical training.

The teacher will maintain record of referrals done by him, health, education talks given, first-aid and minor treatment given, school health,

help in national programmes and an account of drugs and first aid materials.

The teachers are paid an allowance of Rs. 50/- for month for this work. The teacher will qualify for this honorarium only if he/she resides in the village of his/her posting. The health guide has been provided with a first-aid kit and basic drugs will be provided through Block Medical Office of the area. A grant of Rs. 1500/- per year has been sanctioned for this purpose. Supervision and co-ordination of their work will be done by Block Medical Officer. The replacement of drugs and first-aid materials will be done through him. There will be close liaison between the *Rehbar-i-Sehat* and Multi-purpose Health worker and A.N.M.

8. The Community Health Project of the Kottar Social Service Society, Kanyakumari District (Tamilnadu)

This is a comprehensive community welfare project covering primarily, agriculture, fisheries and community health among neglected sections of population like the palmyra climbers, fishermen and landless labourers. Its objective is to implement a comprehensive community health development programme with people's participation and contribution. As a part of the agricultural development programme the project stimulated farmers to dig feeder channels for irrigation through informal meetings and evoking popular participation on food-for-work basis. The supervisory staff and administrative expenses of this project are covered by a contribution from the farmers. As a result of this scheme 10 per cent of the cultivator and almost an equal proportion of landless labourers were given employment in digging canals and terracing land. There was a remarkable increase in food production. In 1973, the project created fishermen unions to eliminate exploitation of middle men and to extend credit and saving facilities to the fishermen, and also enable them to acquire mechanized boats.

The health programme of the project started in 1971 as a feeding programme for 1,200 mothers and children, with food received initially from the people of America through Catholic relief service. As a first step, this programme was reorganised into a health oriented programme with a comprehensive emphasis on applied nutrition, nutrition education, child care, personal and environmental hygiene and sanitation. From a modest beginning of 1,200 beneficiaries in five centres, it grew in April 1972 to 7,000 in 17 centres; in July 1972 up to 16,000 in 38 centres; in January 1973 up to 20,000 in 47 centres; in October 1973 up to 30,000 in 70 centres; in July 1974 up to 36,800 in 99 centres.

The local community provides accommodation for clinics and boarding and lodging for the mobile health team. The voluntary workers arrange

health education talks for women. From an initial team of one staff nurse with two to three helpers the team evolved into one with a community health guide, one or two health workers and one health educator. The health team is assisted by four village volunteers who will help in the work of the nurse in running the clinic, in the house visit of the health team and in the distribution of food. On an average the health team starting at 8 a.m. in the morning finish work by 5 p.m. contacting atleast 150 mothers. Thus the delivery of health care is the responsibility of the local community.

The registration fee collected every six months at Rs. 2/- per year per household will cover the administrative expenses and transport charge of the team. The clinical fee of 45 Paise per clinic for the mother and the child will cover the allowance to staff and cost of preventive medicines. The cost of polio vaccine will be met by the people themselves.

As a result of this scheme a sum of Rs. 18,000 was collected every month and the amount was divided between six villages. By the end of 1976 the mothers in the district had collected Rs. 5,25,000/-. The following work had been completed :

1.	Community Hall & Clinic facilities	:	98
2.	Drinking water wells	:	8
3.	Drainages	:	2
4.	Common latrines	:	3
5.	Slabs for private latrines	:	5,220

The project is running in addition to environmental sanitation a full scale immunisation programme and is trying to do its best to prevent malnutrition. However, the preliminary results of an analysis of health charts of 23,000 children below five showed only 29 per cent to be normal and the rest were suffering from first-degree of malnutrition. After one year the malnutrition increased. As a result of this experience, the project has initiated, (i) a health cooperative scheme from the last few months in 23 villages, (ii) a scheme of training and using health educators, (iii) a scheme to train community health workers, (iv) and use of girls trained as health guides (four batches have been trained).

DELIVERY OF HEALTH SERVICES THE NEED FOR A SECOND FRONT*

C. GOPALAN**

During the years which have elapsed since Independence, we can certainly lay claim to some substantial achievements in the field of public health. Thus, over the last two decades, there has been a steady decline in infant mortality and a corresponding increase in life expectancy. We have also some significant gains in improvement of environmental sanitation. We had almost achieved success with regard to eradication of malaria though there are now disturbing indications of a set-back.

However, we have still a long way to go before we can claim to have achieved even the basic minimum standards of public health in our country. Indeed what still remains to be accomplished in the field of public health improvement is far greater than what has been achieved so far.

It may perhaps be depressing at this point to recount our failures in the public health field but we must learn from our mistakes. We have not as yet made any significant dent on the problems of leprosy, filariasis, tuberculosis and cholera. Indeed, with respect to each of these diseases, we are coming up against formidable problems. Thus with regard to leprosy we are finding that several strains of *Lepra bacilli* in our country are becoming resistant to DDS, the only satisfactory drug which we have in our therapeutic armamentarium. The vaccine against cholera on which we had depended has already been proved to be ineffective and a search for an alternative has become essential. In the field of tuberculosis, in spite of the discovery of potent chemotherapeutic agents and the demonstration of the efficacy of domicilliary care, we have not achieved substantial gains. Indeed recent surveys do not indicate any significant decline in the prevalence of tuberculosis during the last two decades.

What is perhaps even more depressing is that even with respect to programmes which are relatively easy to implement like, for example, the programme for the prevention of blindness in children through the distribution of oral vitamin A, the control of maternal mortality through prevention

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*The annual day Oration delivered at the National Institute of Health Administration and Education, New Delhi on 19th April, 1974.

**Dr. C. Gopalan, Director-General, Indian Council of Medical Research, New Delhi.

of anaemia in pregnant women through distribution of inexpensive iron tablets or even with regard to control of goitre through the distribution of iodated salt, our performance has been far from satisfactory.

It is not as if we do not have Plans. On the contrary we have several excellent plans drawn up for the control of each of these problems which I have mentioned above. The concepts and the basic approach underlying these plans are excellent and unexceptionable. But where we have failed is in the matter of implementation. There has been a vast gap between promise and performance with respect to practically every field of public health activity. While excellent plans have been drawn up at the central level, there has been little preparation at the intermediate and peripheral levels, the levels at which the plans are actually to be implemented. In other words, while there has been a great deal of macroplanning at the secretariat arm-chair levels, there has been very little of micro-planning at the field levels. In most of our health plans we have also failed to build in a system of monitoring and evaluation which would have ensured a feed-back of information from workers at the peripherial levels to the policy makers at the Centre. If we had such built-in arrangements for monitoring and evaluation of our health programmes, we could have applied mid-course corrections in our plans. Many of our health plans have languished for the lack of attention to practical details, lack of adequate preparation and lack of communication between field workers at the periphery and policy makers at the top.

It is in this context that we have to examine critically the current system of delivery of health services and the changes proposed therein. The time for such a critical examination has already arrived. In this crucial task, this Institute has a vital role to play.

A careful look at the data available to us will provide some useful pointers. Let us compare two States of the Indian Union which represent, as it were, the two ends of the public health spectrum in the country, namely the State of Kerala and the State of Uttar Pradesh. According to the latest available figures infant mortality rate in Kerala is 55 per thousand as against 161 per thousand in Uttar Pradesh. The neonatal mortality (that is mortality in infants under one month of age) is 33 per thousand in Kerala as against 72 per thousand in U. P. The expectation of life at birth in Kerala is 64 years as against 55 in U.P. Nineteen per cent of all deaths take place in children under 5 years in Kerala while the corresponding figure in U.P. is 35 per cent. In all affluent countries the female/male sex ratio (number of females per 1000 males) is above 1000. In India as in most developing countries the sex ratio is well below 1000, Kerala, alone among all India States has a sex ratio above 1000.

What are the factors which underlie these striking differences ? If this Institute can pinpoint these factors and if we can at least ensure that in the next decade other States in the Indian Union can move to the Kerala end of the public health spectrum then we would have achieved something. I hope that the National Institute of Health Administration will immediately undertake an exercise to identify these factors. I am sure that the results of such an exercise will prove very rewarding.

If the standard of public health service has to be judged on the basis of number of Primary Health Centres, then we will not be able to explain the difference between Kerala and U.P. According to figures currently available there are 813 Primary Health Centres in Uttar Pradesh as against 162 in Kerala. Even allowing for the differences in population U.P. cannot be considered to be at a disadvantage with regard to the number of Primary Health Centres. Apparently, we have to look elsewhere for the explanation. The level of literacy in the population, the standard of personal hygiene may all be important in this connection. The literacy rate in Kerala is 67 per cent in males as against 31 per cent in U.P. The literacy in females in Kerala is 54 per cent as against 11 per cent in U.P. Hundred per cent children between 6 and 11 years and 75 per cent of all children between 11 and 14 years are in schools in Kerala as against 80 per cent and 28 per cent respectively in U.P. The schools occupy a very prestigious and influential position in the rural country-side of Kerala not only with respect to education of children but also with respect to community affairs in general. Those of us who have had experience of doing field work in Kerala will fully appreciate the pivotal role which the schools play in the socio-economic life of the rural community there.

We are today in the process of re-examining our system of delivery of health services. We have opted for a "composite package programme" which will integrate immunization, family planning and nutrition. We have also accepted the concept of multi-purpose workers for the implementation of health programmes at the peripheral level. While these concepts are, no doubt of excellent, I believe, we have still to undertake detailed exercises with regard to evolving the most practical and effective way of delivering such a composite package of health services. At the National Institute of Nutrition, Hyderabad, we did a limited exercise in order to find out how the nutritional component can be built into the existing programme of the functionaries in the Primary Health Centres and we discovered that the inclusion of even the absolute minimum nutritional component in the programme would call for considerable re-orientation and training of the functionaries.

We are also proposing to improve the coverage of Primary Health Centres by reducing the size of jurisdiction of a sub-centre. This implies

appointment of additional staff or nearly doubling the staff strength. In other words we have accepted the Primary Health Centre complex as our basic health unit and as the only approach to community health service. It is through this institutional framework provided by the Primary Health Centre complex that all our programmes are expected to be channelised.

A basic question that we have to ask ourselves at this juncture is whether in the matter of delivery of health services we are in fact justified in putting all our eggs in the Primary Health Centre complex basket. In the prevalent state of morbidity in our country any system of delivery of health services based mainly on the Primary Health Centre is bound to remain a predominantly curative-oriented operation whatever may be the stated objectives and whatever the staff profile. It is doubtful if even by doubling the staff strength of our Primary Health Centres we will be able to bring about a change of the desired magnitude, in the quality or even the outreach of our health services. According to some estimates, the outreach of our Primary Health Centres today is so inadequate that in some areas only 5 per cent of the pregnant women in the whole community are reached by these services. If doubling the staff strength results in even doubling this percentage we would still be left with a very inadequate coverage.

Under the circumstances it becomes important for us to ask oursleves whether we should not consider alternative or additional strategies. Will it not be a better strategy to open a second front in our battle against community ill-health rather than deploy all our available forces in one sector only namely the Primary Health Centre Complex 2. Here we need not think of a second front which will work in isolation from the first front. Our strategy must be to provide for effective matually reinforcing linkages of forces deployed on the two fronts.

The rural school would appear to be the ideal portal of entry to the rural community and a mobile school health service can well act as a spring-board or spear head for a community health service. There are over a million rural primary school teachers and there are over 60 million children going to the primary schools in the rural areas. School teachers despite their poor salary position are highly respected by rural communities and enjoy a potential role far beyond formal teaching in schools. Their background, their training and position in society befit them to undertake a leading role in programmes which aim at the socio-economic transformation of rural communities. With the pupils as the link, they can establish good relations with the whole rural community. Indeed the involvement of teachers in health programmes is consistent with the philosophy of all developing nations seeking to maximally utilise locally available resources for the socio-economic transformation of our poor communities. It will

indeed be unfortunate not to take full advantage of the vast readymade infrastructure provided by the net work of our rural schools for the implementation of our health programmes.

I am not thinking here of a school health service programme which will be an end in itself and which would be confined to the medical inspection and health care of school children alone. I am advocating a strategy in which the school health service will be used as a means of ensuring the health of the entire "school community". What I am suggesting is a mobile service covering a number of school communities with in-built arrangements for linkages with Primary Health Centre complex functionaries. In such a system a team consisting of a doctor and a health visitor will spend at least a week in each school community and the health care will include not only the children but also the needy members of the school community as a whole. The team will move over to a different school community at the end of a week. One such team can cover 24 school communities in six months and the whole operation can be repeated so that each school is visited by the team twice a year. In such a programme the school teacher will be the link between the health functionaries and the school community and thus play a pivotal role. Such a programme will also provide logistic support for the Primary Health Centre complex functionaries and will greatly increase the outreach of our Primary Health Centres and improve the quality of health service.

Such a health delivery system with the school as a portal of entry will be largely prevention-oriented and will naturally lay great emphasis on health education. It will involve the mobilization, orientation and motivation of school teachers. I am certain that involvement of such a large number of key personnel in our rural areas will contribute to a significant augmentation of the quality and utility and range of our public health service. It will provide a viable, durable and effective infrastructure for our public health programmes and also ensure a continuous and sustained participation of local communities in public health programmes.

I very much hope that this Institute will undertake at least a few pilot studies in two or three blocks in this country in order to test the feasibility and validity of this approach. This is an area of operational research which deserves the highest priority and I very much hope that the National Institute of Health Administration will cooperate with the Indian Council of Medical Research in undertaking this important task.

APPENDIX I

List of full and abbreviated terms used in the document

Auxiliary Nurse Midwife	=	ANM
Christoffel Blinden Mission	=	CBM
Community Health Delivery Corporation	=	COHEDEC
Community Health Nurse	=	CHN
Cooperative for American Relief Everywhere	=	CARE
Corn soya milk	=	CSM
Diphtheria-pertussis-tetanus	=	DPT
Director of Health Services	=	DHS
District Health Officer	=	DHO
District Medical Officer of Health	=	DMOH
Ear, nose and throat	=	ENT
Electrocardiogram	=	ECG
Emmanuel Hospital Association	=	EHA
Family Planning	=	FP
Figure(s)	=	Fig
First information report	=	FIR
Government of India	=	GOI
Government of Madhya Pradesh	=	GOMP
Gram	=	gm
Health Administration Assistant	=	HAA
Incharge	=	I/C
Indian Council of Medical Research	=	ICMR
Instant Corn Soya Milk	=	ICSM
International Unit(s)	=	IU(s)
Jawaharlal Nehru University	=	JNU
Laboratory Technician	=	LT
Lady Health Visitor(s)	=	LHV(s)
Lay first aider(s)	=	LFA
Male Multipurpose Health Worker(s)	=	MMHW(s)
Mallur Milk Co-operative	=	MMC

Maternal and Child Health	=	MHC
National Health Services	=	NHS
National Institute of Community Development	=	NICD
National Institute of Health Administration and Education	=	NIHAE
Nurse midwife	=	NM
Nutrition Worker	=	NW
Outpatient Department	=	OPD
Part time social worker(s)	=	PTSW(s)
Practitioner(s) in Indian Medicine	=	PIM(s)
Primary Health Centre	=	PHC
Primary Health Unit	=	PHU
Private Medical Practitioner(s)	=	PMP(s)
Programme evaluation review technique	=	PERT
Protein calorie malnutrition	=	PCM
Public Health Nurse	=	PHN
Subsidiary Health Centre	=	SHC
Travelling Allowance	=	TA
Tropical Chloride of Lime	=	TCL
Tuberculosis	=	TB
Typhoid and paratyphoid A and B	=	TAB
United Nations International Childrens' Emergency Fund	=	UNICEF
United States Agency for International Development	=	USAID
Veneral Diseases	=	VD
Village Health Worker(s)	=	VHW(s)
Voluntary Health Service	=	VHS
Voluntary Hospitals Association of India	=	VHAI
World Health Organization	=	WHO

APPENDIX II

Glossary of words of local languages used in the document with their English equivalents

Ayurved(s)	=	Practitioner(s) of Ayurvedic system of medicine
Bajra	=	A type of millet
Balahar	=	Locally constituted food for children
Balsevika(s)	=	Female Child Care Worker(s)
Balwadi(s)	=	Public nursery for children
Bhagat	=	Persons practising treatment of illnesses mainly through rituals
Charpai	=	Bed-stead
Dai(s)	=	Indigenous midwife
Gram Panchayat	=	Elected village assembly
Gramsevika	=	Village level female worker
Hind Kusht Nivaran Sangh	=	Indian Leprosy Control Association
Jaggery	=	Unrefined brown sugar
Jowar	=	A type of millet
Kanchi	=	Rice preparation (liquid)
Kobiraj	=	Practitioner of Ayurvedic system of medicine
Lakh	=	One hundred thousand
Mahalir Mandram	=	Womens' club
Mahila Mandal(s)	=	Womens' club
Mukhyasevika	=	Female Senior Worker
Nain	=	Indigenous midwife (wife of a barber)
Nirodh	=	Condom
Ojha	=	Persons practising treatment of illnesses mainly through rituals
Panchayat	=	A village elected assembly
Panchayat Samiti	=	Elected for a group of villages assembly
Purdah	=	Scclusion of women
Puttu	=	Rice preparation (solid)
Ragi	=	A type of millet
Rehbar-i-Sehat	=	Health guide(s)
Suraksha	=	Protection
Taluk/Taluk/Tehsil	=	Sub-division of a district
Vaid/Vaidya(s)	=	Practitioner of Ayurvedic system of medicine
Zilla Parishad	=	Elected district council

LIST OF PARTICIPANTS

1. Dr. N. H. Antia
   Trustee,
   The Foundation for Medical Research,
   84-A, Abdul Gaffar Khan Road,
   Sea Face Corner, Worli,
   Bombay.

2. Dr. S. V. Apte
   Deputy Director-General
   Indian Council of Medical Research
   Ansari Nagar, New Delhi.

3. Dr. R. Arole
   Director
   Comprehensive Rural Health Project
   Jamkhed (Ahmed Nagar District)
   Maharashtra.

4. Dr. N. K. Bachan
   Medical Superintendent,
   Harriet Benson Memorial Hospital
   Lalitpur (U. P.).

5. Prof. D. Banerjee,
   Chairman of Social Medicine and Community Health Centre
   Jawaharlal Nehru University
   New Mehrauli Road, New Delhi.

6. Dr. K. C. Basu Mallik
   Director of Health Services
   West Bengal, Calcutta.

7. Dr. H. W. Butt
   Director
   Indo-Dutch Project for Child Welfare
   6-3-885 Somajiguda,
   Hyderabad.

8. Dr. N. S. Deodhar
   Joint Director of Health Services
   Government of Maharashtra
   Pune

9. Dr. P. R. Dutt
Adviser to Director
Gandhigram Institute of Rural Health & Family Planning
P. O. Ambaturai, Madurai District,
Tamil Nadu.

10. Dr. C. Dwarkanath
13A/1 W. E. A., Karol Bagh,
New Delhi-110005.

11. Dr. Eric Ram
Director
Integrated Health Service Project, Wanben Hospital,
Miraj Medical Centre,
Miraj, Maharashtra.

12. Dr. Robert Fortuine
C/o Director, Alaska Medical Centre,
American Embassy
New Delhi.

13. Dr. M. V. George
Chief Evaluation Officer
State Planning Board
Trivandrum-4 Kerala

14. Dr. B. C. Goshal, Assistant Director General (HA)
Directorate General of Health Services
Nirman Bhavan, New Delhi.

15. Dr. (Mrs.) Shanti Ghosh,
Prof. & Head,
Department of Paediatrics
Safdarjung Hospital
New Delhi.

16. Dr. C. Gopalan
Director-General
Indian Council of Medical Research
Ansari Nagar, New Delhi-110016.

17. Dr. (Mrs.) Tara Gopaldas
Consultant, Programme Evaluation
Organization & Planning Commission,
New Delhi.

18. Dr. (Mrs.) Kamala Gopal Rao
Professor of Social Sciences
National Institute of Health Administration and Education
E-16, Greater Kailash
New Delhi.

19. Dr. B. A. Jayaweera
Medical Research Officer
World Health Organization, Regional Office for S. E. Asia.
New Delhi.

20. Dr. S. A. Kabir
Assistant Director of Health Services and Family Planning
DHCS 81, Mount Road, Madras.

21. Dr. B. Kapila
Director of Health Services, Haryana
Madhya Marg, Chandigarh.

22. Dr. S. A. Kaul
Doctor in Charge
Lady Willingdon Hospital Manali
Kulu District, H. P.

23. Dr. V. N. Kekre
Deputy Director of Health Services
Government of Madhya Pradesh
Bhopal.

24. Dr. V. K. Kochar,
Senior Research Fellow,
Department of P. S. M.
Institute of Medical Sciences
Banaras Hindu University
Varanasi

25. Dr. Ko Ko
Assistant Director of Health Services
World Health Organization, Regional Office for S. E. Asia
New Delhi.

26. Dr. K. A. Krishnamurthy
Professor of Paediatrics
Madurai Medical College,
Madurai

27. Dr. A Krishna Rao
Dean, Kasturba Medical College
Manipal.

28. Maj. Gen. B. Mahadevan
Professor and Head of the Department
of Preventive and Social Medicine,
St. John's Medical College,
Bangalore.

29. Dr. S. N. Mathur
Director of Medical and Health Services
Andhra Pradesh,
Hyderabad.

30. Dr. (Smt.) Vina Mazumdar
Chief Editor
ICSSR, II PA Hostel Building
Indraprastha Estate
New Delhi

31. Mr. J. P. Naik
Member-Secretary
Indian Council of Social Science Research
New Delhi.

32. Dr. Narayanswamy
Joint Director of Health
Directorate of Medical Services
Government of Karnataka, Bangalore.

33. Dr. Sushila Nayar
Mahatma Gandhi Institute of Medical Sciences, Sewagram,
Wardha.

34. Dr. B. R. Purohit
Directorate of Medical, Public Health & Family Planning Services,
Rajasthan
Jaipur.

35. Dr. (Mrs.) V. Rahmathullah
Medical Adviser
UPSAI Glenview
Coonoor

36. Dr. L. Ramachandran
Director
Gandhigram Institute of Rural Health & Family Planning
P. O. Ambaturai, Madurai Medical College
Madurai (Tamil Nadu).

37. Mrs. P. Ramaswamy
UNICEF, New Delhi.

38. Dr. V. N. Rao
Deputy Director-General
Indian Council of Medical Research
Ansari Nagar, New Delhi.

39. Dr. K. S. Sanjivi,
Director of Projects, Voluntary
Health Services,
"Shantam"
Perunguti P. O.
Madras.

40. Dr. P. M. Shah
Prof. of Pediatrice Institute of Child Health
J. J. Group of Hospitals and Grant Medical College,
Bombay.

41. Dr. S. G. Srikantia
Director
National Institute of Nutrition
Hyderabad.

42. Dr. A. Timmappaya
Director
National Institute of Health Administration and Education
E-16, Greater Kailash
New Delhi.

43. Dr. K. N. Udupa,
Professor of surgery and
Director
Institute of Medical Sciences
Banaras Hindu University
Varanasi.

GUIDELINES ON METHODOLOGY AND PARAMETERS FOR ASSESSMENT TO BE FOLLOWED IN FIELD OPERATIONAL RESEARCH STUDIES ON HEALTH CARE DELIVERY SYSTEM

In pursuance of the decision taken at the symposium on "Alternative Approaches to Health Care" held at Hyderabad from 27-30 October, 1976, an expert group was recently convened by ICMR to work out the guidelines on the methodology of field operational research studies in Health Care Delivery and to work out the parameters of assessment. The recommendations of the expert group are as follows :

1. The objectives of the study should be clearly speltout. The objectives should cover initial, intermediate and ultimate objectives. The specified objectives should relate to priority areas.
2. The study should be feasible operationally. The interventions proposed to be carried out in the study are administratively and operationally viable. The study should also have specificity and maximum outreach.
3. It should reasonably be expected that the study would be continued as a normal health activity even after the intervention period. The idea is that there should exist scope for it to be extended to other areas as a normal health activity.
4. The initial objectives should specify the following :
   (i) Area to be covered and its broad characteristics;
   (ii) Complete delineation of population to be served;
   (iii) The methodology for baseline health surveys including design, if any, data to be collected, methods of analysis etc;
   (iv) Selection of personnel and their training;
   (v) Preparation of manuals, report forms etc;
   (vi) Availability and mobilisation of resources, both financial and material;
   (vii) The strategy for establishing rapport and its maintenance;
   (viii) The methodology to be adopted for establishing linkages with formal and non-formal health care system(s) operating in the area; and
   (ix) Time duration of each of the activities to be performed during the initial phase of the project.

5. The intermediate objective should define the following :

(i) Specific types of intervention;
(ii) Clear cut narratton of objectives to be achieved;
(iii) Area to be covered;
(iv) Logistics of reaching target group or groups;
(v) Fixed time span;
(vi) Experimental design of the intervention;
(vii) Type of services to be provided;
(viii) The kind and quality of supervision to be provided;
(ix) The information system for monitoring and control;
(x) The contextual studies, if any, to be carried out.

6. The impact objectives should be clearly defined in relation t target group or groups, the services provided and the method intervention.

7. Criteria of assessment will depend on the nature of interventio the specified target group(s) being covered, the specific servic provided and the time span. Suitable indicators for

(i) coverage in respect of quantity and quality of services;
(ii) accessibility of care;
(iii) effectiveness;
(iv) efficiency; and
(v) other indicators specific to the project

8. In each of the objectives referred to above i. e. initial, intermedia and impact objectives, (a) the time dimension (b) the quali dimension (c) the quantity dimension, and (d) cost effectivenes should be reflected.

9. The methodology and evaluation will be

(i) concurrent and (ii) terminal.

The concurrent evaluation will be done both by the impl menting authority as well as the funding authority, but indepe dently. The terminal evaluation will be through survey data an review of reports.

The Indian Council of Medical Research will identify th independent agencies who will do the evaluation.

10. The preparatory phase may be for six months to one year. B the intervention phase should be a minimum period of thr years. The evaluation phase may be for six months to one yea